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Stable Manure.

DR. VOELCKER'S INVESTIGATIONS—COMPOSITION OF FRESH AND ROTTEN MANURE.

[Written for the Co. Gent. by Prof. S. W. JOHNSON.]

In our last article on this subject (page 185) we discussed the much mooted question of the comparative value of fresh and fermented manure. Considerations were adduced which showed plainly that in some circumstances the one, and in other circumstances the other, may produce the best effects. We now propose to inquire, what and how much loss may occur during the fermentation of manure, and here, as every where in agricultural studies, we must be cautious not to resolve upon our conclusions before we have made as full and careful survey of the subject as is possible. The idea, so stoutly maintained by scientific men, that fermenting manure may suffer an enormous loss of value, was no invention of an active imagination, but was the legitimate conclusion derived from the results of actual experiments. Lately we have a new series of elaborate experimental trials conducted by Dr. VOELCKER, which seem to modify, and in some degree reverse the old routine. Practical men differ, too, in their views. Some believe that the loss of ammonia is "humbug;" others most positively assert that it does escape, and claim to have found that the use of means for retaining it has been highly remunerative. These differences of opinion demonstrate that the subject is no simple one, but involves a variety of influences and effects. The fact is, that the question is by no means entirely settled, and while we may quiet our fears that it is altogether a losing business to allow manure to ferment without using expensive fixers of ammonia, we must not forget that some ammonia will escape under almost any circumstances, and that a little ignorance or carelessness may be the occasion of a serious loss of this invaluable manuring agent. The experiments of Dr. Voelcker have been alluded to in the Co. Gent., but no full account of the method he used, or the conclusions he arrived at, has been laid before our readers. So important is this investigation in some points, that it deserves to be reprinted in this country, not only for the practical results it contains, but also to show how how, and how much, science may benefit the agricultural art; at the same time it needs to be adapted, so to speak, to American climate, i. e. the nature and probable effect of any causes operative here that may modify the English conclusions, should be explained. Let us then attend to Dr. Voelcker's experiments. The account of these occupies 70 pages of the Journal of the Royal Ag. Society of England.

I have not had the time needful to make a careful abstract of this mass of results, and have therefore availed myself of an outline of them, written by the distinguished STOECKHARDT, which appears in the January No. of an Ag. paper (Der Chemische Ackersmann,) edited by him.

The objects of the investigation were to study the comparative compositions of fresh and rotten manure, and to trace the changes which the one undergoes in passing into the other.

The method of the investigation was chosen with a view to furnishing reliable practical, as well as scientific conclusions. The experiments were conducted on so large a scale as to represent accurately what happens in the great operations of practice; and the barnyard and the laboratory were made to unite their resources in an admirable manner. In consideration of the difficulties to be encountered, Dr. Voeckler's method must be admitted to be quite successful, although it is now easy to indicate how it might be imporved, and *it is necessary that new investigations be made, in which some of the deficiencies of the present one are supplied, before we can feel warranted in drawing final conclusions.*

Composition of fresh and rotten manure. The material to most of Dr. Voeckler's experiments, consisted of a mixture of the fresh dung of cattle, horses, and hogs, of which a large quantity was worked over until it was made as uniform as possible. Several portions, of two cart-loads each, were taken and treated as follows:

1. Heaped up against a stone wall, but exposed to wind, sun and rain.

2. Heaped up as 1, but under a shed, and protected from rain, sun and wind.

3. Spread out as manure is accustomed to lay in open yards.

4 A smaller heap was made of mixed manure, that was well rotted, and had been taken from the lower

part of a large heap, where it had lain six months. It was placed against a wall, but exposed.

These heaps were put up in Nov., 1854, and were weighed and analyzed in February, April, August and November, 1855. Of the 50 tables of the original, we copy a few of the most important. Since some of the analytical results were vitiated by mixture of earth with the heaps, the corrections of Stoeckhardt have been adopted.

Here follows a general and comparative view of the composition of several specimens in different stages of decomposition.

COMPARATIVE VIEW.

No. 1.—14 days old, unfermented, may be considered fresh.

No. 2, *a*.—Exposed during three winter months.

No. 2, *b*.—Sheltered during three winter months.

Ingredients in 1000 Parts of the Dry (water free) Manure.	No. 1. Fresh manure 14 days old. Nov. 1854.	No. 2. Slightly fermenting manure, 3 mos. old. *a* Uncovered.	No. 2. Slightly fermenting manure, 3 mos. old. *b* Covered.	No. 3. Well fermented from bottom of a large heap six months old.	No. 4. No. 3 after lying one year.	No. 5. No. 1 after being spread one year.
Total organic matters,	835	740	710	670	560	480
Soluble " "	73	120	80	151	44	19
Total inorganic "	165	260	290	330	440	520
Soluble inorganic matters,	45	98	65	60	36	18
Total nitrogen,	19	24	23	26	27	19
Nitrogen in soluble organic combination,	4.4	9.1	5.3	12.0	4.0	1.6
" as free ammonia,	1.0	0.6	0.6	1.8	0.1	0.007
" as combined ammonia,	2.6	2.1	1.6	2.3	1.2	1.2
Nitric acid,	none.	traces.	traces.	none.	} heavy traces	slight traces.
Potash,	20	41?	27	20	....	....
Soda,	2.3	7	7	3	....	....
Chloride of sodium,	0.9	3	2	1.5	....	....
Phosphate of lime,	20	19	30	30	....	....
Lime,	35	44	59	72	....	....
Magnesia,	4.6	1.5	2.5	5.6	....	....
Sulphuric acid,	3.8	8.5	6.6	5.2	....	....
Soluble silica,	36	32	40	69	72	66 pr. ct.
Per cent of water in moist dung,	66	66	56	75		

There are two points of especial interest brought out by this investigation, viz: 1st. Yard manure, even when fresh, contains *a notable quantity of soluble phosphate*. The urine of herbivorous animals contains none or almost none of this substance. It has been hitherto assumed that fresh dung contains it only in an insoluble form, but Dr. Voelcker's analyses show that nearly one-half of the phosphoric acid existing in fresh dung is soluble in water, so that it is not needful to ferment manure before this ingredient can become available for plants

2d. Yard manure, whether fresh or rotted, contains *much less ammonia* in a volatile form (carbonate of ammonia,) than has been hitherto assumed. The nitrogen of fresh manure is chiefly present in an insoluble condition, and becomes soluble mostly by conversion into ammonia during the process of decay.

Further, the well-known fact is confirmed that the carbonaceous portions of manure diminish, while the mineral and nitrogenous ingredients correspondingly increase in relative quantity, during fermentation.

Well fermented manure contains more water (10 per cent) than fresh manure.

The percentage of *soluble matters*, which are of most manurial immediate importance, is seen to increase very much in manure as it ferments under cover; while as No. 4 shows, they are washed away when the heaps are small and unsheltered, and especially (No. 5) when the manure is spread out and exposed to rains.

The principal soluble mineral ingredient is *silicate of potash;* next is phosphate of lime.

The chief ingredient of the insoluble portion is *silicate of lime;* next is phosphate of lime.

A better comparison is furnished by the following table, in which are given the ingredients of a ton (2000 lbs.) expressed in lbs., and assuming the manures all to contain 75 per cent. of water. The ingredients are arranged in two classes, those soluble and those insoluble; the first class comprises the immediately available part of the manure.

Contained in One Ton.	No. 1. Fresh manure	No. 2. Slig'tly rotted.	No. 3. Well rotted.
Matters Soluble in Water.			
Total soluble matters,	58	90	105
" " organic matters,	36	50	75
Nitrogen in soluble form,	2¼	3½	6
Ammonia fixed and as carbonate,	14-5	1¼	2
Total mineral matters,	22	40?	30
Soluble phosphate of lime,	4½	5	7
" lime and magnesia,	11-10	1	3
" potash,	8½	14?	9
" sulphuric acid,	4-5	2¼	1⅛
" silica,	3½	4	5
Matters Insoluble in Water.			
Organic matters,	380	310	260
Nitrogen in insoluble form,	7½	8	6½
Total insoluble mineral matters,	60	96	135
Phosphate of lime,	5½	7	13
Potash,	1½	2¾	1
Lime and magnesia,	18	25	35
Sulphuric acid,	1	1¼	1½
Silica (soluble in acids,)	14	15	29

In the above we plainly see that there is a regular increase of *soluble organic matters* including *nitrogen*, which keeps pace with the progress of fermentation.

The increase of *soluble mineral matters* is not so evident and regular, which may be explained by the admixture of soil with the manure when the heaps were worked over in order to average them for analysis. It is still sufficiently obvious, though much inferior to that of the organic matters.

The greater effect of well rotted manure is therefore chiefly due to the larger quantity of *available nitrogen* it furnishes to crops.

The facts that in barn-yard or stable manures are contained *all the elements* which can serve as food to the plant, and that these exist in it in *so great a variety of forms*, serve to explain why, more than any other fertilizer, it deserves the name of a *universal manure*. Thus all of its important ingredients exist in at least two conditions of solubility, and its composition is constantly undergoing changes. It is evident that the greater the variety in the form and condition of the constituents of a manure, the greater will be the number and variety of soils and crops which it may benefit.

In fresh manures (with abundant litter) the larger part of the insoluble organic matters consist of straw in an almost entirely undecomposed state. In rotten manure the straw is converted into humus (humic ulmic acids, humine and ulmine) the compounds of which, with potash, soda and ammonia, are soluble, and of a dark brown color, whence the hue of the drainage of dung heaps.

The humus mostly fixes (forms non-volatile compounds with) the ammonia that results from the decay of the nitrogenous matters. A small portion of ammonia escapes this kind of combination, and passes into the atmosphere as carbonate.

In our next will be noticed particularly the changes and loss manure undergoes by fermentation. *Yale Analytical Laboratory, New Haven, Ct.*

Facts in the Agriculture of New Jersey.

PROFESSOR COOK'S REPORT—COMPARISONS WITH ADJACENT STATES—PROFITABLE CROPS—WASTE LANDS AND EMIGRATION—POTATOES AND MARL IN THEIR CULTURE—FERTILIZERS—MARL AND CANCERINE.

A few pages upon our subject, in the "Third Annual Report on the Geological Survey of the State of New Jersey, for the year 1856," for which we are indebted to Prof. GEO H. COOK—we have read with much interest. Tables furnished to Prof. C. by town assessors, show a very gratifying degree of progress in that state since the U. S. Census of 1850, "an advance in the Agricultural products of about 50 per cent, and price of land nearly doubled." Comparisons are made with the statistics of Connecticut, New-York, Pennsylvania and Delaware, which look very favorably for New-Jersey, both in respect to the increase in the production of the staple crops of wheat, Indian corn and potatoes, and also in the average yield per acre of the different grains, while there is a very large balance in her favor as regards the products of orchards and market gardens. Her position, with the large cities of New-York and Philadelphia on her immediate borders, with navigable waters almost surrounding her, and crossed by numerous railways and canals, gives her agriculture an important advantage, and it has another perhaps equally great, in the marls, limestones and other fertilizers in the soil, the fish and crabs of the contiguous ocean, and the offal of the adjacent cities. The success attendant upon good farming is referred to as unsurpassed—"the product per acre for the whole area of New Jersey, being considerably greater than in any of the adjoining states," while immense returns are in some cases yielded by lands devoted to fruits and vegetables. Strawberries yield from $100 per acre upwards; indeed the premium of the Burlington Co. Ag. Society in 1855, for the most profitably cultivated crop in the county, was awarded to one of this little berry, which yielded a *clear profit* at the rate of *twelve hundred and twenty-two dollars* ($1,222) per acre. "Cranberry fields are known which annually yield to their owners $300 dollars an acre." Fortunes have been made by the growth of apples and peaches. From $100 to $300 per acre are yielded by crops of early potatoes.

In view of all this, it is still more surprising than in some of the other older states, that the unoccupied lands of New Jersey attract so little attention. It is calculated that "there are still two millions of acres, or nearly one-half the state, uncultivated"—not all entirely waste, it is true, as small crops of wood are taken from it, but lacking neither the fertility or healthiness of other localities "from which persevering and skillful husbandry is now deriving the largest and most certain returns." The large body of uncleared land in the central portion of southern New Jersey is, however, gradually diminishing, and productive farms are extending themselves where a few years ago there was only unbroken forest. Without any ill-will toward the western states, any desire to check their growth and prosperity, or any endeavor to under-rate the real advantages they *do* possess, we may advise farmers of the East, in justice to themselves, to think more than once before determining on a removal. The above facts in relation to New Jersey, are true in a greater or less degree, of portions of this and other adjoining states, and it requires no very long experience to satisfy the observer that quite as great an amount of energy, skill, and industry, will be found requisite to secure a fortune in the agriculture of the prairies, as in that of good localities at home. We would have the farmer here, before deciding to cut off his connection with the east, ponder whether there are not acres of waste lands on his present farm which might be made profitable, and a fund of wealth in all its soil, of which his practice in the past has given him little conception. We would have him dig about the old homestead one year longer, and dung it well, and see if it may not be made to bring forth better. We would have him open his eyes to all the improvements of which farming here is susceptible, before he carries a shiftless and miserable system to burthen his career even in the most fertile of the newer States. We may be thought *interested*, and thus worthless advisers in this; but States as newly settled as Ohio share the complaint, and Indiana, Illinois and Wisconsin may come to utter it, when at last peace and good government shall tempt their sons away to the still newer and more attractive fields of Kansas and Nebraska.

The Census Reports of New Jersey show a large increase in the product of potatoes, against a diminution for the whole States of Connecticut, Pennsylvania and New-York. Middlesex Co., in the first, eight counties in the eastern part of the second, mostly on the Delaware river or its branches, and in this State the three counties constituting Long Island, by themselves manifested an increase. "Of the States in which there was no greatly increased population from immigration, New Jersey and Delaware were the only ones in which there was not a diminution of the crop of Irish potatoes between 1840 and 1850." The increased product in New Jersey is ascribed to the presence and use of marl; in Delaware the largest crop is in New Castle Co., in which marl is also found, and the largest increase on Long Island was in those parts of it, which there is some reason to believe lie in the same geological formation as those portions of New Jersey in which the increase was greatest.

"The fact of this remarkable difference, in favor of our marl districts, is that which mainly concerns the practical farmer, but the cause of it cannot but be interesting to reflecting minds. Whether its special action is due to some component of the marl, or whether its usefulness is partly owing to the mingling of new earth, taken from beneath the surface, with the soil, is a question not easily answered. There is no effect produced on the appearance of the potato top. The crop, of choice varieties, is from seventy-five to one hundred and fifty bushels an acre. The potatoes are of good size, smooth and smooth-skinned, of superior quality for the table,* and not subject to the potato rot. The marls, which are least esteemed for permanent improvement of the land, produce quite as good effects upon a single crop of potatoes as those which have the highest reputation. The Cumberland marls, which are not green sands, are deemed almost indispensible to this crop, and they produce potatoes of an excellent quality; though I think the average crop per acre is somewhat less than where green sand marl is used."

This marl is attracting more and more public attention. That from Squankum sells at Freehold for eight cents per bush, and at pits, according to the labor of excavation, at from 25 to 75 cents per ton. Its actual worth it is difficult to estimate. Worn-out soils are stated to have recovered by its use more than their original fertility, and the value of the land is said to have been thereby increased from fifty to an hundred fold. "In these districts, as a general fact, the marl

* Potatoes from the marl region will bring fifty cents a barrel more than others, in the New-York market, and then have the preference.

has been obtained at little more than the cost of digging and hauling but a short distance. There are instances, however, in which large districts, of worn out lands have been entirely renovated by the use of this substance, though situated from five to fifteen miles from the marl beds, and when, if a fair allowance is made for labor, the cost per bushel could not have been less than from twelve to sixteen cents. Instances are known where it has been thought remunerative at 25 cts. a bushel." The following are results of analyses

	(1.)	(2.)	(3.)
Water,	12.200	10.260	10.600
Silica,	38.700	46.660	51.162
Prot-oxid of iron and alumina,	27.690	24.921	22.300
Potash,	4.467	6.818	4.274
Lime,	.....	2.865	3.478
Carbonate of lime,	13.910	.....	.....
Magnesia,	1.213	3.089	2.037
Phosphoric acid,	1.140	3.599	4.540
Sulphuric acid,	0.309	0.982	0.429
	99.629	99.194	98.820

(1.) of the marl which has been most largely used upon potatoes in Monmouth — (2) the variety which is most generally used in Burlington, Camden, Gloucester and Salem counties—(3.) that which found in Deal, Poplar, Shark river, and Squankum, in Monmouth Co.

Prof. COOK, after alluding to the great difference between the estimates of different authorities as to the value of the different constituents, adopts mainly the calculations of Prof. WAY, and therefrom estimates the value of (1) at $4.71 per ton, that of (2) as $9.05, and that (3.) at $7.96. The supply of these may be considered inexhaustible, "in many cases a ton or more having been dug from underneath each square foot of surface." The district, which this green sand underlies, extend "from Sandy Hook Bay and the Atlantic Ocean on the shore of Monmouth Co., to Delaware river and bay, at Salem, Salem Co., a distance of 90 miles, and with a breadth varying from 14 miles at its northeastern to 6 miles at its southwestern extremity," including an area of 900 square miles. Calcareous marl, consisting mainly of carbonate of lime, is extensively developed through the whole of this district, and is of well known value as a fertilizer.

Cancerine, a manure made from the king-crabs abounding on the sea shore, was noticed in Prof COOK's last year's report, from which we have already obtained and published a statement of its value and power as a fertilizer. The result of further trials during the past year, have fully sustained his impression of its importance. It is thought to supply an excellent substitute, both in quality and price, for Peruvian Guano, as a concentrated manure. Immense quantities of fish are also easily procurable, at small expense.

We have given but an imperfect summary of Prof. COOK's review of the Agriculture of New Jersey, but one which can scarcely fail to impress our readers more deeply and justly with the numerous advantages it possesses. To those who read the report itself carefully and considerately, there can but remain a diminished doubt—if any ever existed in their minds—of the mooted "profits of farming."

SALT BARRELS FOR PRESERVING APPLES.—A correspondent of the Scientific American says "he purchased five barrels of choice apples taken from one pile, last autumn, and put them into his cellar. On the 1st of April last, when he came to examine them, those in four of the barrels were mostly all damaged, while those placed in the other barrel were sound—"fresh and good." What was the cause of the preservation of the apples in this barrel? Our correspondent says it was a Syracuse salt barrel, and had contained coarse salt, and he believes this was the cause of their immunity from rot. He, at least can give no other reason. Neither can we."

Drill Seeding.

MESSRS. TUCKER & SON—I read in your Co. GENTLEMAN, that a correspondent inquires of the benefits of drill seeding, or if it is better to sow seed in drills or broadcast. I see it has been noticed two or three times since in a manner quite to the point. I will add my experience on the subject.

In the fall of 1853, I engaged a man who owned a drill to come and sow six acres with wheat in a field of ten acres. The part sown with the drill was the poorest and fartherest from the barn; consequently had not received as much manure as the other. The remaining four acres were sown broadcast. At the time of harvesting, the drilled wheat was much the best—probably four or five bushels to the acre. The same season, (some time the last of Sept.) I had another piece sowed with a drill—clover sod, second crop; the green clover turned under would hay probably 1½ tons to the acre)—of a long triangular form. The outside was sowed with a drill. A strip nearly the whole length of the piece in the middle, of about three-quarters of an acre, was sown broadcast. At the time of harvesting, the drilled wheat would yield 25 bushels an acre, while that sown broadcast would only go about three or four, and was badly shrunk and smutty at that. That winter with us here, was by far the worst for winter killing wheat I ever knew. Common sowed wheat here did not yield over one-third to one-half a crop that season.

Having so good luck with a drill that season, I purchased one in company with one of my neighbors. Then I thought I would try and experiment with spring wheat. I had a piece of low unreclaimed bog swamp land of fifteen acres, which had raised two crops of corn, and which I wanted to sow to wheat and seed down for a meadow, well drained with open drains. I fixed the drill, expecting to sow 1½ bushels to the acre, but in consequence of white caps which clogged the feeding slide, it only put on one bushel and four quarts. Ten acres was sown in this way. The remaining five acres were sown broadcast on the furrows, 1½ bushels per acre, well sowed and well put in. The wheat sown broadcast came up first, looked the best, and did the best until about knee high, when the drilled part came on, and after that did the best until harvest. When harvested the berry of the drilled part was nice and plump as wheat could be, while that sown by hand was some shrunk; the hands while cutting judged the drilled part would yield three or four bushels to the acre the most. The fifteen acres yielded three hundred and ten bushels and three pecks.

I think from my own experience and others about me, that drilled wheat will yield on an average 3 to 4 bushels to the acre over broadcast one season with another, besides requiring about one-half bushel less seed. There are some very good farmers here which condemn the wheat drill for the reason that they have seen some pieces of wheat sown broadcast which were better than some sown with the drill, without taking into consideration the difference in the condition of the land. I, myself, with the help of the Hessian fly have raised some very poor pieces of wheat sown with a drill, other things being quite favorable. Seeds sown with a drill, are all deposited at an even depth, and consequently can grow and ripen more evenly than if deposited at all depths, from the top of the ground to six inches below. E. DENNISON. *Forestville, Chaut. Co.*

A VALUABLE JACK.—Mr. James Hall, of Bourbon Co., Ky., recently sold a Jack, two years old last spring, for the sum of $2,400. Mr. J. F. Pany, of Scott county was the purchaser. To this animal was awarded the first premium at the late State Fair, at Paris.

Potatoes on Clover Sod.

MESSRS. EDS.—Your paper has recently contained several valuable articles on the cultivation of Potatoes, yet perhaps others may be interested in learning my method and opinion in the premises. I do not pretend to go into any *extras*, but try to give as good soil and culture I think profitable as circumstances permit.

The same soil and preparation which will produce good corn, brings, with me, a good crop of potatoes; and I generally fit the ground for both at one operation, as both occupy one field in most instances. To a good clover sod on a loamy soil, I apply from twenty to thirty loads of barn-yard manure per acre, leaving it in heaps as drawn out, and spreading it when ready to plow under. I plow from six to nine inches deep a few days before planting, taking care to make no baulks, and to turn under the manure as perfectly as possible. Have never tried it, but think a double plow would be a good implement for the work. I then harrow thoroughly, lengthwise the furrows in order to get the surface in fine tilth, to expedite planting. But few sods are torn up, or need be, if the ground is plowed properly.

The field is then marked out in rows, three and one-half feet apart (for both crops), and planted across these at the same distance, so as to give a fair chance for cultivating both ways. If I planted in drills, I would cover the seed with the plow, but planting only an acre or so, I use the hoe, and in the cornfield, prefer hills, as I wish to cultivate across the whole field—through corn and potatoes at once. As to seed,—to get the most potatoes (in number) put in eight or ten eyes to a hill, or one whole potato; but to get fine large ones, I do not put in more than three eyes in any instance.

The culture usually given, is to pass through each way twice in a row, with the horse-hoe or cultivator, and then finish hilling by hand. I used to hoe twice, sometimes, but of late years I defer hilling until I can do that part all at once—cultivating a second time. On a clover sod, well plowed immediately before planting, once hoeing will keep down the weeds until the potato vines get large enough to cover nearly the whole surface.

Sometimes early, and sometimes late planting succeeds the best—as the season may chance to be wet or dry, late or early. If the drought holds off until the potatoes get well rooted, it does little injury; and I think it pays well to top-dress with a spoonful of plaster to each hill, as soon as the potatoes get well up. Last year I tried ashes, and thought them beneficial.

The product per acre varies with the season, from one hundred and fifty to four hundred bushels per acre.

The rot has sometimes affected my potatoes when very prevalent, but not often, or to any great extent. B. *Niagara Co.*

Application of Hen Manure or Guano to Corn.

For the information of W. F. Woodward, (p. 89) and all others concerned, I send you my plan of using hen manure on corn—also guano. First, I plant my corn without manure of any kind, unless I have marled the ground the previous winter; after the corn is up a few inches, say the fore part of June, I run a small plow as near the hills as possible, throwing the soil from the corn; it may now lay a few days more; when I am ready to turn the furrow back, I apply the manure in the furrow, not only by the hill, but the whole space from hill to hill; then turn the furrow over the manure and tend your corn at the same time. By putting it on in this stage of the crop's growth, it brings out the crop far better than putting in the hill. The roots are all drawn to the manure. The deeper the manure the deeper the roots. J. C. TAYLOR. *Holmdel, N. J.*

Wintering Cattle and Horses.

LETTER FROM A BOY.

MESSRS. EDITORS—Supposing that the columns of youri nteresting p per are open to young correspondents as well as old, and hoping by my example other boys may be led to give their experience, I will give you a little of mine in the care of cattle and horses during the past winter. The latter part of last November, my step-father (G. W. Durant) left home to spend the winter, leaving the sole care of 10 head of cattle and a span of horses to me. It was thought to be a considerable undertaking for a boy of 16 years (and rather small at that,) and father said a short time before he started, that if he staid at home we should have hay to sell, and the cattle would come in the spring kicking up their heels, but if he went away we should have to buy hay, and tail the cattle. *I* thought we could tell better when spring came.

As soon as he was gone, and I had the whole care, I commenced experimenting to find how much hay each cow needed, and I soon got so that I could tell by the weight of a forkful as I took it up, whether it was enough or not. In the very coldest weather I added a little too, and in warm weather I deducted a little from usual weight. At noon I gave them a little straw or chaff for a change. The milch cows I fed a peck of carrots, beets, or potatoes, with all the good hay they could eat daily.

Now that the cattle are taken care of, let us enter the horse stable, and there you see a span of small, smooth, and compactly built horses, as sleek and fat as two well-fed mice; and how are they kept so? Do they have all the hay they can stuff, and six, eight, or twelve quarts of oats, as the case may be, after the very common method of keeping horses? No, sir! It is my opinion it would not take long for a span of horses to eat themselves up, sleek and clean, at that rate. Now come around behind this partition, and there you see a large pile of rye straw, cut about an inch long. We give our horses a bushel and a half of this straw, well wet, with two quarts of rye bran and shorts, morning and night This bran and stuff is very light, about four bushels to the hundred. They have not worked much this winter, it is true, but I have rode about with them a great deal. When we commence our spring's work, we shall give them two quarts three times a day, instead of twice, and if worked very hard, may be a few carrots.

I think that this subject of wintering cattle and horses well, and doing it cheap, is one that would be for the profit of farmers (in our vicinity at least) to study into and experiment upon. Now, Messrs. Editors, if this should be acceptable to you, I may write again some time. As to tailing cattle and buying hay, I have seen nothing of the kind; on the contrary, every body is telling how nicely our cattle look, and I heard father say that we had nearly hay enough to winter our stock over again. ALFRED H. BRONSON. *Rensselaerville, N. Y.*

We thank our young friend for the above, and shall be glad to hear from him again. If he will do up all his work as faithfully and intelligently as he cared for his father's stock through the winter, he will not fail to make a first-rate farmer.

REMEDY WANTED.—I am desirous of finding a remedy for the following: A three-year-old steer has a hard bony substance formed on the lower jaw, which covers a space of three or four inches. It appears like a large protuberance, adhering very closely to the bone, seeming like an enlargement or swelling of the bone. It made its appearance two months ago, is increasing in size and extending toward the throat. E. M. H.

Mutilated Evergreens.

So long as those nuisances, and enemies to civilization and comfort, *street cattle*, are allowed, many beautiful and costly evergreens will have their tops cropped off if a gate chances to blow open. Such cropped specimens are to be seen almost everywhere, and the owners generally regard them as ruined. They may however be brought into shape with a little attention. The leading upright shoot being destroyed, select a large thrifty side-shoot, as near the top as practicable, and carefully bend it up perpendicularly. If there is enough of the stump left, tie it to this stump; if not, place a rod in contact with the stem, and tie the rod to the trunk below and to the branch above (Fig. 1). The upright branch will soon become a strong grower, and form in a few years a good upright leader. This result will be assisted if the other side-limbs are cropped at the ends, or pinched in. The small crook in the trunk thus caused, will constitute no material defect, as the stem of a thickly growing evergreen is soon entirely hid by the foliage both winter and summer.

Fig. 1.

Experimenters on the Curculio.

A great number of remedies against any disease, indicates both its formidable nature, and the difficulty of cure. It is so with the *Curculio*—we have had many prescriptions, good and bad. Among the bad or inefficient ones are, salt, lime-wash, sulphur, tobacco water, soap, cotton bands on the trunk, spading up before freezing, various fœtid odors, bottles of water in the tree, and many more; while among the more useful and efficient remedies, may be named, paving, dusting daily with ashes, jarring down on sheets, and turning in pigs and poultry. Paving can be applied only in certain instances; the two next may be used anywhere, and the last, namely, pigs and poultry, wherever provision has been made for the confinement of these animals.

Our present object is to show the large vote which has been given in favor of the last named remedy, throughout the country, that our readers who have not given it a full trial, may have the more confidence in its efficacy, and make preparations for it accordingly.

WILLIAM N. WHITE, of Athens, Georgia, says in his recent work on "Gardening for the South:" "The only really satisfactory mode of dealing with this insect, is admitting pigs and poultry into the fruit garden."

A. G. HANFORD, of Waukesha, Wis., says, "A few years ago, he made an enclosure for his hens, unintentionally enclosing two or three plum trees. These trees produced perfect fruit, while on all the rest it was destroyed by the curculio. The next year he enclosed the rest, and had a good crop from all."

A. J. DOWNING, said in the Horticulturist, "No method has proved effectual, but placing trees in the midst of the pig and poultry yard—and notwithstanding the numerous remedies that have been proposed in our pages since the commencement of this work, this proves the only one that has not failed oftener than it has succeeded."

WM. H SOUTHWICK, of New Baltimore, in 1851, enclosed fowls with several of his plum trees. These were all loaded with plums, while the rest of his trees, not enclosed in the yard with fowls, lost all their fruit. The trees were all alike thrifty and vigorous.

A correspondent of the Genesee Farmer in 1854, says, "while on a visit to a friend in Lockport, N. Y., I observed about a dozen very thrifty and handsome plum trees in a yard where his hogs were kept. The trees were almost broken down by the weight, while another tree, outside the yard, showed only here and there a plum."

DAVID THOMAS stated in the old Genesee Farmer, that the late Charles Gifford, of Ledyard, Cayuga Co., N. Y., had never failed in having a good plum crop for seventeen successive years. His herd of swine always ran among the plum trees during the curculio season, and were sufficiently numerous to keep the ground thoroughly cleared of all fallen and punctured fruit.

Now there may be localities and seasons, with insects too numerous to be all destroyed by this remedy. In such instances, it will prove a most valuable auxiliary, and used in combination with some of the others we have named, will prove successful under all circumstances, if not too feebly applied.

Thumb Pruning.

Every one who raises a fruit tree should remember that it is easier to rub off a small green shoot than to saw off a large limb; and that it is better to give a well formed head to a young tree, than to mutilate a large one in attempting to cure early deformity. Trees that have been transplanted this year, or which have made but a few seasons' growth may be controlled in their shape with great ease. In examining young trees for this purpose, it will be necessary to cut out with a knife such young shoots as grew last year or before, that are unnecessary, or that interfere with a good, even, well distributed head; and during the early part of the present year's growth, the trees should be occasionally watched, and redundant shoots just forming rubbed off at once.

Cranberry Culture.

ANSWER TO J. M. CLARKE.

I consider made land, formed from creek deposits, second to wet swamp land covered with beach or other sand. It could be prepared for cranberries by plowing deep with a double plow, thereby bringing the subsoil to the top, and burying the sod deep. Then harrow smooth and mark with a small plow two and a half feet each way; set the vines in the crosses, 3 to 5 plants in a hill. Keep out all grass and weeds with the cultivator and hoe for the first year or two, when you will have only to overflow them occasionally during a drought. Water should not stand on the vines in summer over six or eight hours. For your land, the Bell variety would be the safest. I have a variety of Bell which I call *favorite*, on account of its fruitfulness and close-matting qualities, which I think will prevent grass and weeds from growing sooner than some of the larger vined varieties. The best time to set is in the spring. For land that can be worked with cultivator or plow, 2¼ feet apart is the best distance. Gather as late as you can previous to heavy frosts. With a cranberry rake forty bushels is considered a day's work; the yield from two to three hundred bushels per acre.

I have not had much experience in cultivating the cranberry by irrigation, the level part of my cranberry yard being supplied with a limited quantity of water from a spring, the remaining part being a dry sand knoll kept mellow by cultivation and swamp muck, on both of which my plants do well. D. L. HALSEY. *Victory.*

☞ Hon. J. Evelyn Denison, the newly elected Speaker of the British House of Commons, is President of the Royal Ag. Society of England.

Culture of Beans.

In the 217th number of the Co. Gent. is an inquiry on the field culture of beans; and as thousands of bushels have been raised in this neighborhood, we can tell how we do it, premising that while they are a paying crop, those who raise it must expect to have a little back ache

The ground should be mellowed and prepared as for corn, and then marked with a marker, which may be made of two or three narrow two inch plank fixed like a sled, and 24 to 30 inches apart, to make the rows as close together as may be and leave room to pass through with a cultivator one way, to clear out the weeds, and to leave a mellow furrow. I insert cultivator teeth near the back end guaged to run two to three inches deep.

The beans should be dropped four in a hill, and the hills eight inches or less apart, with kinds that branch and spread but little, and farther apart with others. One secret of raising a large crop, is to spread the hills as nearly as possible over the whole ground. Plant after corn planting--the earlier the better after the risk from frost is past.

Our earliest kind requires close planting on rich ground, and ripens just after wheat harvest. Our next earliest but more prolific sort, ripens a week or two later, while the most productive but most risky is later still.

When the larger part of the pods begin to get dry, they should be pulled and stood with tops down and roots up, five rows on two, more or less, so as to drive a team between—and when dry, draw in and thresh. Our yield is frequently from 20 to 30, and some say they have raised 40 bushels to the acre.

All things considered, they are thought by our farmers to be the best crop to precede wheat—while oats are a poor one, and with us rarely precedes it. J. U A. *Ulysses, Tompkins Co., N. Y.*

Drilling vs. Broadcast Seeding.

Having noticed a number of different opinions in regard to drilling and broadcasting, I am willing to give my experience on this subject. I purchased in company with a neighbor, a drill of J. M Harvey & Son's Manufacture, Amsterdam, N. Y. (J. P Ross' Patent). In the spring of 1855, the first sowing was a piece of spring wheat. Not knowing anything about the drilling system, I sowed part with the drill and part broadcast in the same field and on the same day. That put in with a drill was more than a quarter better than that sown broadcast, both in straw and grain. I tried my oats in the same manner; they were also better where they were drilled. I have sowed all my grain since with the drill, being satisfied that it is the only proper method of putting grain into the ground. My neighbor, in sowing his buckwheat, had part sown with the drill and part broadcast, and when harvested the drilled was about half better; it was all well filled, while the broadcast was hardly filled—both put in the same day and in the same field.

I think it is better on other accounts than broadcasting. It saves a quarter of the seed; besides it cultivates the land, and leaves it in good condition for the crops, better than can be done with the harrow. The grain is all put in at an even depth in the soil, and I am satisfied that it is a paying machine.

I also have a thresher and mower, and I think they are good machines; but my drill pays me the most of any. It takes less time and seed and betters the crop, and in dry seasons they are indispensable. Knowing what I do about the drill, I think farmers can not afford to sow broadcast if they can obtain a drill. I would like to have others give their experience on the same subject. SARATOGA FARMER.

Drying off Cows.

MESSRS. EDITORS—The inquiry made by G. Berry, Burnt Hills, concerning his full-blooded Devon cow, according to my experience is easily answered.

There is no remedy in her case known to me. She will go on. But I will give the cause, and a preventive, which is much better than a cure. The cause of her being in such a state after calving, results from her not being dried properly last season. There is much more danger in drying a good cow than a poor one.

The proper way to dry a good cow is to try their teats, say eight or ten days after what is termed the last milking. If any milk be found in her bag, it must be drawn. If the milk be found of a natural color it must all be drawn; if it resembles milk and water in color, the cow is doing well. If at the first time trying her the milk is a natural color, she must be milked and let stand other eight or ten days, then tried again. If the milk is allowed to become stringy in the teats when dried, it will spoil the cow. I have had cows which would give more milk on one teat than on the others. Such cows, *if worth anything for milk*, if allowed to go dry without after examination, would be sure to lose *their teats.* A DAIRYMAN. *Allegany Co, N. Y.*

Disease and Death among Calves.

Almost every spring or summer we hear of deaths among calves. The sight of calves that look puny, unthrifty, or sickly, is one which not unfrequently pains the eyes and sympathies of those who have occasion to travel in the rural districts. Whence come these losses and these painful sights? More frequently, we think, from stingy, starving, and unnatural modes of feeding, than from any other cause. To enable the owners to make a few extra pounds of butter, the poor calves are deprived of the food which Nature has provided for them, and get some cold substitute, in the shape of whey, skim-milk, or some other innutritious slop. The consequence of this short-sighted, mistaken economy is that the starved sufferers become puny and sickly, stunted and unthrifty, and that death steps in, now and then, to relieve some of them from their miserable life of avarice, inflicted starvation and suffering. Those who would avoid this cruelty and miserable economy, and those who would secure animals that will pay, will keep their calves *well* for the first three or four months; for creatures starved and stunted in their youth will never make as thrifty, healthy, well-formed, and able-bodied cattle as those which had a better start in life.

Cure for Caked Udder in Cows.

Common soft soap, rubbed on at or after milking times, for two or three days—an article always on hand in every farmer's house, and fully equal to Arnica. W. T L.

Mixing Lime with Manure.

ERS. CO. GENT.—I wrote to you some time back for your opinion in regard to mixing lime with barn-yard manure, and you were so kind as to give it a place in your excellent paper; and although your answer did not quite satisfy my wishes, by my name and residence being inserted, a kind friend sent me the wished-for information, for which I owe him many thanks. He says that lime should not be mixed with barn-yard manure in any case whatever, as it would certainly destroy the fertilizing properties of the manure, which has been proved by many experiments by my friend, D. M Mulvany, and others of Norristown, Pa. DAVID MILLER. *Brownsville, Pa.*

Chicken Roosts.

MESSRS. EDITORS—When last at that model Hotel, "*Fouquet's*," in Plattsburgh, Clinton Co., N. Y., among other sight-worthy accompaniments of his unrivalled establishment, I was conducted by the proprietor to his Henery. This, I found, like everything else appurtenant to the Hotel, an exemplar of neatness, and exhibiting evidences of the remarkable inventive talent of the owner. I was particularly struck with the ingenious plan adopted in constructing the roost for the chickens. It consisted of a shaft of wood, placed vertically, from which projected at right angles, at the height of five feet from the ground, five radiating arms, like those of a turn-stile but not so stout, and about five feet in length. From the extremities of these arms strips of the proper length, and of the shape now most approved to give the fowls the firmest grasp, were carried, until chords had been formed to each arc of a circle, whose circumference would include those extremities. Then, other similar strips were fastened, in the same way, parallel to the first, and about two feet distant. The arms were strengthened by braces. The shaft had iron spindles inserted in either end, and thus revolved with facility upon pivots. One great advantage of this revolving roost was, that after the chickens had all become quiet, upon their respective perches, by gently turning the whole machine, any particular chicken could be brought round for selection, without disturbing any of the rest, and the position of the party examining would remain unchanged. Any one acquainted with the great uproar and disturbance usually created by the cook, when in search of victims among a large number of chickens, or with the difficulty of capturing fowls, when their repose has been suddenly invaded, will appreciate the excellence of the contrivance I have described.

The same source,—the springs in the United States Reservation,—which the ingenuity of Mr. Fouquet has compelled to furnish, through pipes skillfully carried a long way under ground, the excellent water always to be found at his Hotel, sends up a tiny *jet d'eau* which continually drops its little stream into a miniature basin in the centre of the henery. Thus the fowls have always an abundant supply of the much needed element.

I cannot close this communication without referring to the very beautiful and graceful mode of vine training adopted by Mr. Fouquet, and which I believe is quite original with him. At one corner of the fine colonade which ornaments the entire front of the Hotel, overlooking the Saranac, a large specimen of the woodbine has been trained up, until on a level with the second story, and then is led along, from snowy pillar to pillar, in beautiful festoons, and in those graceful catenary curves, supported by a small iron chain, the links of which are hidden by the mass of foliage. The effect is very fine, and nothing can be more light and airy; the vine appearing to be sustained by the points of its contact with the pillars alone. When the vine is filled with dark glossy berries, the beauty of the whole scene is much enhanced; and no traveller will fail to bear away with him, in pleasing remembrance, the elegant taste which has adorned the exterior, and the good cheer and exceeding cleanliness and neatness which render so agreeable the interior of Fouquet's Hotel. E. L. R. *Baltimore, Md.*

Garden Vegetables.

Three points are to be especially observed, in cultivating successfully garden vegetables. First, perfect freedom from weeds; secondly, thinning out where they have come up too thickly, for a superabundance of such plants retards the growth and development of the rest in precisely the same way as weeds; and thirdly, keeping the ground mellow and the crust broken, by very frequent pulverization, especially if the ground is rather clayey.

How to Manage Fifty Acres.

I am about purchasing a place of fifty acres, eihgt of which are wood-land; the soil is a stiff clay, but has a sufficient fall to prevent water from ever laying upon it. It is ten miles from a railroad, so as to prevent any bulky or perishable article from being raised on it to profit. I will now give what the present proprietor has raised on it and considered a good crop, without deducting anything from grain for what he must have used for feed and seed. The butter is the amount sold, the average price of which here is 25 cents a lb.; the price of the grain is what it is now selling for.

6 acres of Corn, 300 bushels,	$180.00
6 " Oats, 300 "	120.00
6 " Wheat, 90 "	135.00
200 lbs. of butter at 25 cts.,	50.00
	$485.00

So much for his statement of what he has done. Now for my statement of what I want it to do.

First cost of land,	$3,000
Stocking the same,	1,000
	$4.000
Interest at 6 per cent.,	$240.00
Wages and farm bills,	400.00
Taxes and ware and tare,	60.00
	$700.00

I consider this a low estimate of what my expenses will be, but if the farm can be made to realize this sum, I will be satisfied. Will some of your readers who have had the experience of a place of this size, inform me how I can make that amount from it—what course of tillage I should follow—how much stock I should keep—how many hands I would require—in fact the full working orders by which I could realize that amount? By answering the above they would much oblige A FARMER.

How to Apply Hen Manure to Hills of Corn.

ESTEEMED FRIENDS—I noticed in THE CLLTIVATOR an inquiry as to how safely to apply hen manure to hills of corn. I have had some experience in it. Last spring when planting my corn, I put about half a pint to the hill, and put the grain upon it. In a week or ten days I went to see if it was up, but to my surprise not more than half had come. I waited a few days longer to see if any more would come, but no more of it appeared. I examined to see what was the cause. I found the grain was yellow; the manure was too strong, and therefore killed it. In replanting I mixed it well with earth, and in a few days it came up strong and grew finely, leaving that which was planted by the side, manured with barn-yard manure, a great way behind. The corn had a much richer color during the summer, and the ears were larger and better. My opinion is, that it should be composted with earth a few weeks before using.

The past winter I have been composting mine with unleached ashes, and intend to apply it to the hills. I think it can safely be used in this way, but be careful not to drop the corn on the manure; put it by the side; the roots will soon reach it. If this experiment should prove favorable, I will let my brother farmers know about it. D. FARLOW. *New-Market N. C., 3d mo 21st, 1857.*

LARGE LAMB.—I have an Oxfordshire lamb, three weeks old this day, that weighed, when dropped, fourteen and a half pounds, and weighs to-day thirty-three and a half pounds. He is the product of a ram purchased of Mr. Carroll of Maryland, and an ewe from the flock of Justus C. Haviland of Dutchess Co., N. Y. Who can beat it? ALLEN WHEDON. *Pawlet, Vt.*

Underdraining with Stone.

We wish to add a few remarks to the communication of our correspondent, C. G. CALKINS, of Ohio, publish-lished a week or two ago, and which contains some valuable suggestions on underdraining with cobble-stone.

We have practiced this mode for many years, before the introduction of tile. When stone are on the ground and abundant, they may be used to advantage. The objections to their use, are two; first, the earth is liable to work down among the stones, or "cave in," where streams run across the surface in heavy rains or in thaws, and find their way down through the soil. Secondly, the increased labor of digging a drain wide enough to lay the stones well, will pay for tile if not very remote from a tile manufactory.

The mode of laying must vary with the soil. Those soils which approach quicksand in character, render it almost impossible to use stone successfully. When they are saturated with water, they will find their way among the stones through every avenue,—at the top, bottom and sides. It is rare that such drains endure many seasons uninjured. The best security for them is to lay, first, flat stones on the bottom, (or hard, durable boards or slabs,) to prevent the cobble-stones from sinking into the earth; to use as small stones as practicable against the sides of the ditch, so that the interstices there may be too small for the soil easily to enter: and to cover the top with very small stone, and then very coarse gravel, or with flat stone, for the same object, before the straw or inverted sods preceding the earth covering, are applied. In stiff or clayey soils, the earth rarely falls in among the stones, even when little precaution is taken. After practising underdraining with stone on such lands for many years with entire success, we had occasion to adopt the same mode in another district of country, where the soil was light and much more sandy. The first spring destroyed the value of most of them by the caving-in of the soil, and this evil was only prevented effectually, by covering the stone filling either with flat stones, gravel, or hard-wood slabs, before applying the earth at the top.

As a general rule, we would not recommend the use of cobble-stone, except in soils of considerable tenacity.

The importance of a good drain under every post fence, is not generally understood, and we are glad to see the subject alluded to by our correspondent. Wherever post holes retain water, they are sure to be heaved by frost, and the fence thrown out of shape; and the posts cannot last so long, where they are alternately subjected to water soaking and drying. But if all the water which falls, passes immediately down into the ditch, it cannot lie in contact with the posts long enough to soak them, and as a consequence, they must remain perpetually dry, and last for a long period. ROBERT B. HOWLAND of Union Springs, N. Y., who has used Pratt's ditcher with success, found it cheaper to cut a ditch with this machine, in which to set the posts for a fence, than simply to dig the post-holes by hand, and he thus attained all the advantages of drainage besides a practice well worth copying.

A single suggestion on the efficacy of underdraining, on lands that do not at all appear to need it. It is a very good rule for determining its necessity, to observe whether water will *stand* in holes dug two or three feet, for this purpose. If the subsoil is porous, the water will immediately sink away, and ditches would be wholly useless. But if water will stand 48 hours in the holes, draining is necessary to relieve the subsoil of this cold and chilling mass which fills it.

Now, if the surplus water in the soil and subsoil at the wettest period, is only equal to a depth of two inches, then for a ten-acre field it would amount to more than *seven thousand hogsheads*. Suppose, therefore, that this field has such a slope as to give it what many would suppose a *natural* drainage—"not needing any ditching"—"dry enough already"—then, in getting rid of these seven thousand hogsheads of hurtful water, it must, every gill of it, soak drop by drop, from one particle of earth to another, until it all passes slowly down, almost imperceptibly, from one side of the field to the other. No wonder that days and even weeks are required to complete the process, and to render the land dry enough to become friable and fit to receive seed, and promote the extension of the young roots of crops. Now, give this field a smooth, tubular channel of tile, for every two rods of its whole surface, the shortest way down the slope; the water in the soil then has only about *one rod* to soak through the soil before reaching one of these drains, and most of it much less than a rod. When it reaches them, it shoots rapidly down the smooth descending tube, and in a few minutes has passed the boundary of the field, instead of being otherwise compelled to *soak* its weary way the whole 40 or 50 rods or entire breadth of the field. This rapid discharge reduces the soil to dryness in so short a time, as to surprise those who have never before witnessed it, and to lead to the common supposition that the simple statement of the practical advantages of thorough underdraining, by those who have given it a trial, are wild exaggerations

Manures.

In two former numbers we have given some views on the management of farm yard manures, which are more largely used by the great body of farmers, than all others. But unfortunately, too many of them never think of looking beyond the limits of their hog and barn-yards for an additional supply. They even make no account of the deposites in the vaults of their privies, or the droppings of their fowls.

The solid portion of "night soil," after being dried with the retention of its gases, is an exceedingly fertilizing agent, and has been pronounced by Boussingault equal in value to ten times its weight of farm-yard manure. Said the late Professor Norton: "The manure of pigeons, hens, ducks, geese and turkeys, is very valuable, and should be carefully saved. The amount to be obtained from these sources may be thought so insignificant as to be unworthy of notice; but it must be remembered that three or four hundred pounds of such manure, that has not been exposed to rain or sun, is worth at least fourteen to eighteen loads of ordinary manure."

The farmer that neglects to properly husband and apply the above named rich manurial substances within his reach, and at the same time freely expends his money, (a thing that has been a thousand times repeated,) for "poudrette and guano," (nearly the same two things under different names,) does not fully understand his own pecuniary interest!

Health and cleanliness demand the frequent removal of all offensive matter from our dwellings and outbuildings; and especially the urine and fœces of the privies. They should always be constructed with reference to this Instead of having beneath them a a deep, well-like vault, the sills should be some two or three feet above the surface of the ground, and a strong, tight plank box should be placed beneath to catch the fœcal matter. The box should be some two or three feet longer than the privy, so that one end of it may extend beyond the sill; from the outward end of the box, the fœcal matter could readily be shoveled into a wheel barrow, and properly disposed of and cared for. But there should always, at least from early spring till late in autumn, be provided a sufficient supply of dry muck, clayey loam, charcoal dust or saw-dust, and

frequently thrown in to absorb the liquid in the box, and to cover the solids. Plaster, (but neither lime or wood ashes,) might also be freely used; and the box should be cleaned as often as once a week—managed in this way there would be but little or no offensive odor, either in the privy or in the removal of the contents of the box. We are aware that we are writing upon a homely subject, but our creed is "evil to him that evil thinketh." Health, cleanliness and interest all require that more attention should be paid to this "homely subject." We have given Boussingault's opinion of the value of "night soil"—but his opinion was founded on the "original package," and not the "wishy washy stuff" often sold to farmers as *poudrette*, at two or three dollars per barrel at the place of manufacture. But mind, readers, we do not charge the manufacturers of poudrette with intentional fraud or cheatery—but it is not in the nature of things that they can make a first rate manure from the night soil collected in the cities. The city privies are cleaned out perhaps once or twice in the year, but during the intervening months decomposition is going on, and what is the result; why, the constituents of ammonia combine and unite with carbonic acid, and escape—the phosphorus and sulphur combine with hydrogen and result in the formation of sulphuretted and phosphoretted hydrogen gases—and like the ammonia, they escape into the air and are lost. But pursue the plan we have chalked out, and you will effect *two* important objects, viz: the suppression of noxious odors and the retention of the most *fertilizing properties of the material;* and this should be composted with several times its bulk of muck, loam, or turf from the road side.

We have given Professor Norton's opinion of the value of the manure of fowls. The manure of birds is richer than that of any animals, for the reason that here we have the liquid and solid excrements mixed together. On this account it is particularly rich in nitrogen, and also in phosphates. We are pleased to perceive by the agricultural papers, that farmers appreciate the value of the manure of their fowls; although it may not be worth quite as much pound for pound as a prime guano, it is valuable for the same reasons—its ammonia and phosphates. But we are sorry to say in much the largest number of published experiments we have read, in the application of hen manure as a fertilizer, the experimenters have *mixed unleached wood ashes* with the hen manure. Guano is valuable in proportion to the amount of ammonia it will yield—mix ashes with guano and the ammonia will be expelled - precisely so with the dung of fowls. If any have doubts upon this matter, just rub together a teaspoonful each, of fresh ashes and moist guano or hen manure, and then you will know something about *free ammonia*, if you will just give the compound one good sniff.

The better way to manage the droppings of hens, is to collect them every few days, and dry as speedily as possible, because if they lay in a moist state in any considerable quantity for even a few days in warm weather, they will heat and ferment; carbonate of ammonia will be generated in large quanties, and be lost to the owner of the *roost*.

When hen manure is well dried it can be stored in old barrels or boxes, and safely kept till wanted. Pulverize and sift it if you please, and then mix it with several times its bulk of good soil, and it is then ready to drop in the hill or drills, giving the farmer a rich reward for his care and forethought.—(*To be continued*)

WHEAT AND OATS.—In a recent conversation with Paoli Lathrop, Esq, of South Hadley Falls, he stated to us that he had derived great advantage from sowing spring wheat and oats together—the crop used for horse feed, whole or ground. He stated that the wheat kept the oats from falling, by which means they filled better, and then the mixed crop gave as many bushels as would have been obtained of oats, while the value was considerably greater. The proportion of seed is one-third wheat and two-thirds oats—three bushels to the acre.

Salt, Sulphur and Bones for Cattle.

Some three or four years ago a discussion of some length was carried on in our columns in regard to the propriety of salting hay, and the best mode of supplying salt to stock, both in winter and summer. The conclusion which was at length arrived at, and which seemed satisfactory to all who had taken part in the discussion, was this, that salt is most suitably administered to stock, not when forced upon them in uncertain and perhaps excessive quantities, as it is when put upon their hay, but when placed so as to be within their reach, in a box or trough sheltered from storms. This mode of administering salt possesses several advantages over any other mode which is usually practiced, of which advantages it is not one of the least that animals are thus left to supply themselves with this article according to the promptings of the safest and most unerring guide, namely, the instincts with which Nature has provided them.

At the time referred to, suggestions were made recommending several additions to the salt, such as sulphur, ashes, tar, &c. Recently we have had a suggestion that ground bones would be a useful addition to the salt, or any mixture of salt and other materials as above, especially for growing cattle whose bones are not yet matured, and for milch cows, which derive much of their food from *old* pastures which are usually deficient of a normal supply of phosphate of lime. We approve the suggestion, though we must say that this mode of supplying a common, and now a pretty generally known defect of *old* meadows and pastures, is on a rather too small scale. In consideration of the large amount of bone matter or phosphate of lime required for the healthy growth of young animals, and in consideration of the fact that every ten gallons of milk contain bone earth enough to form about seven ounces of *dry* bone, equal to about forty pounds of bone dust in the course of a year, it seems that larger supplies than can be given in the way proposed are absolutely necessary. This may be accomplished by applying any manure which contains phosphate of lime. JOHNSTON estimates that, when the milk of a cow goes off the farm, or is converted into butter and cheese and carried off, there is yearly drawn from the land a quantity of bone earth which can only be restored by the addition of 40 lbs. of ground bones. If to this is added only 10 lbs. for the bone carried off by the yearly calf, the land will lose by each cow as much bone earth as is contained in 50 lbs. of ground bones.

Guided by such an estimate, and making an allowance for animals fed and fattened on the farm, but eventually sold off, any one may calculate the amount of phosphate of lime which should be applied to his meadows and pastures to prevent exhaustion and its consequences.

Remedy for Bad Milk in Cows.

MESSRS. TUCKER & SON—I noticed an inquiry in the Cultivator from G. Berry, for the cure of a certain Devon cow that he sold to one of his neighbors. I have a cow that calved a few days ago, and not knowing the exact time that she would calve, I milked her to within three days of calving, when her milk grew very thick and stringy. After she calved I supposed that the calf would take that all away, but it did not disappear, and she began to dry up. I then pronounced it garget and gave her a teaspoonful of saltpeter at night in her mess, and another dose the next night, which has cured her, and she is gaining in her milk very fast. J. ELLSWORTH. *Ann Arbor, Mich.*

Planting and Hoeing.

The comparative importance of planting and hoeing is not generally well understood. In setting out fruit trees and planting garden vegetables, great care is often and properly used. The inquiry is made, "*How* shall I set out my fruit trees in the best manner? *When* is the best time to do the work?" And instructions, carefully listened to, are willingly followed.

But, unfortunately, the care is not continued. The good beginning is not carried out. Of the many who plant well, very few cultivate well. The fine mellow soil of spring, becomes too often a hard, dry, baked soil in summer. The clean surface at planting, is converted into a weedy, grassy surface when the trees come out in leaf to grow rapidly, and which then most of all times need all the strength and moisture of the earth. Those who have planted well should therefore at the present season, rather increase than diminish attention to their trees.

There is no tree that is more affected by cultivation, (and by "cultivation" we mean a *continued* mellowing of the soil,) than the young *peach*. We have seen many instances where the simple act of keeping pulverized the surface around the trees, has induced a growth of two to two and a half feet in a summer; while on the same ground, and both treated alike in every other respect, other trees which were neglected did not in any instance grow more than two or three inches.

And there is no tree that is more speedily injured and destroyed by the hot, hard, baked soil at midsummer than a newly transplanted *cherry* tree. There is scarcely a man who has set out a dozen young cherries, that has not complained that although "they all started to grow," about midsummer some of them suddenly withered, and soon perished. The cause is, the roots not having penetrated deep enough into the earth, they are scorched and dried up in the parched soil. The remedy too often resorted to, is watering the trees on the surface of the ground. This moistens the *surface* only, and causes it to bake, but the water does not often reach the roots. If watering should become necessary, several inches of the top soil should be taken off, the water poured directly on the roots, and the soil then replaced. But the best remedy by far, is timely *mulching*. Keep the surface mellow, till the approach of the hot weather of summer, and when the trees begin to grow rapidly, and consequently need much moisture, to sustain this growth and supply the evaporation from the leaves, then place a thick coating of old straw, hay, leaves, &c., around each tree, not less than five or six inches thick. This will keep the surface moist and cool, and in every case, if properly and timely applied, save the young cherry trees.

These remarks are not addressed to those very careless persons, who, after having bought young trees at a high price, thrust them rudely into a hard soil, as one would set a post, and devote no care to them whatever. Such persons believe that success is owing to *luck*, and wonder why some of their neighbors are so much more fortunate than themselves.

And yet, of the two, we would much prefer to abide the success of a badly transplanted tree, well cultivated afterwards, than one set out with all imaginable attention, and subsequently neglected.

The same want of continued attention is frequently observed, in relation to farmers' vegetable gardens. Great pains are taken in manuring and planting, but subsequent neglect spoils all. A neighbor was once remarkable for the skill with which he finished his garden beds in spring, some by-standers remarking that they were so smooth that one "could almost see his face in them;" but before the end of summer, they were usually covered with a dense growth of weeds. It would have been better to have planted more roughly and to have reserved a part of the labor for after culture.

Those who read these remarks, and who have planted young trees, and vegetable seeds, will observe that *now* is the time for attention to hoeing, spading, and cultivating their trees and garden crops. Keep down the weeds, while small—one day with the hoe when they are only half an inch high, is better than an entire week when they have attained the height of half a foot; and the crop itself will be double the size for being kept always entirely free from the choking influence of large weeds. The same advantage will result from a prompt mellowing of the surface—if never allowed to grow hard and crusted, the process is very easy. The boy, who, with so much torture, combed his head but once a month, could not conceive how any one could endure the process daily; and it is precisely the same kind of reasoning which those persons adopt, who think the labor of a single hoeing in a summer is as much as they can endure, to say nothing of doing it once a week.

Fire Blight.

David Thomas of Union Springs, N. Y., has kindly furnished us the following extract from a letter to a correspondent on this subject, which contains some interesting suggestions and statements.

"On the subject of *Fire Blight*, I observe much difference of opinion. I think I have seen four kinds. 1. Insect blight. 2. Bark killed in winter. 3. Frozen when in full leaf. 4. Sun blight.

For more than twenty years my fruit garden was nearly (not quite) exempt from this malady; but the exception was so trifling that I considered my pear trees about as safe as my apple trees. In 1845, however, when we had severe frosts near the close of the 5th month, I lost some fine trees, and many others were much damaged. The effect of the frost was almost immediately visible. It fell on us like a shower, for we had nothing to compare with it since 1817. Besides the pear, the apple, cherry, and even the mountain laurel and silver fir suffered much—with this difference, however, the frozen sap becoming *poisonous*, was confined to the pear tree. All the damage sustained by the former was done at once—the leaves, twigs and fruit died; but what was left continued healthy; while blotches of dead bark appeared on the main trunk of the pear, showing that the poison had entered the circulation and was at work.

Late in the spring of 1846 we had also severe frost; and in 1847, early in summer, (later than all) we had another, though but few people knew of it, as it was not visible in the morning. I had covered most of my tender plants in the evening—it was so cold; but a south wind set in after midnight, and raised the temperature. A near neighbor who was up in the night, however, *found the grass crisp under his feet with frost*. The effect was soon visible. Many young pears and apples—black as death could make them—remained through the season on the dried twigs.

We want self-registering thermometers to tell tales of the night.

I have seen many trees killed by the hot sun, where the trunk or large branches had been exposed by injudicious pruning; but those cases had no resemblance to *frost blight*. Besides, several of my apple trees that suffered most from frost, were protected from the sun by buildings or umbrageous limbs, while on the sunny side no damage was received."

Under-Draining—Maryland Plan.

MESSRS EDITORS—Though the subject is somewhat trite, and the pages of the COUNTRY GENTLEMAN have lately contained divers short articles upon under-draining, yet I am induced to add the record of my practice and experience to that of others already contributed, because I have not yet read any account of a method pursued quite similar, in its details, to that of your correspondent.

It is hardly necessary to insist upon the propriety of determining the grades of all drains, whether superficial or subterranean, as an indispensable prerequisite to all subsequent operations. This is accomplished by running various trial lines of levels, from the highest to the lowest point of the area to be drained, and then establishing a uniform grade between these points, cutting through or passing round intervening obstacles, in as straight a line as the nature of the ground, the expense to be incurred, and other considerations may permit;—for, as a general rule, the sooner and the more directly the superfluous water can be conducted to its destination, the better.

When properly prepared for receiving the materials with which it is proposed to construct the under-drain, I have found it very advantageous to sink, at intervals, at the bottom of the ditch excavated, and particularly wherever there is an angle in the course of the drain, a small circular well of from two to three feet in depth, and of about eighteen inches inside diameter. These little wells I have walled up with brick or stone, carrying them up to within a short distance of the top of the ground, covering them over with large flat stones, and then placing a short wooden post or stone, upright above the capping stones, and filling up with earth around the post to a point a little above the surrounding ground. There is, of course, an opening left in the side of the well, of the same size as the calibre of the drain, and another, on the opposite side of the well, of equal size;—these openings being for the entrance of the water into and its discharge from each well. The object and advantage of these small wells is, that the current of water, as it passes on its course through the drain, in crossing the water in the wells, is slightly arrested in its flow, and, spreading over a wider surface, deposits a great deal of the earthy matters with which it may be charged, especially after rains, or in the early spring. These substances being carried by the force of the current into the well, fall, many of them, at once to the bottom, by the force of gravity, and others not so heavy, fall low enough, before they are carried across the well, to prevent their egress, and to insure their ultimate subsidence to the bottom. The object of placing the post or stone above mentioned, so as to be visible above the surface of the ground, is that the precise position of the wells may be ascertained, and by drawing a line between two such posts or stones, the exact course of the under-drain may be at any time determined, in case repairs are needed, or in case the very wholesome precaution of making a plat by course and distance, where the under-drains are extensive has been unfortunately neglected. And here I will remark, in passing, that some arrangement, either by plat or by monuments, will be found extremely useful, where the net work of drains is far spread, in order to know where to counteract the attacks of those natural sappers and miners, the great enemies of all under-drains, the musk-rat and the cray-fish.

When the wells become filled to the level of the entrance opening from the drain, with sedimentary deposit, by opening the earth from above, and removing the capping stones, they can readily be cleaned out, and things being replaced as before, they will continue their useful functions unimpaired. No one who has not tried this contrivance of the subterranean well, can have any idea of the vast amount of matter that is deposited in them, and how soon, especially in a drain of recent construction, they become filled with solid substances. This can easily be verified by any one who constructs them, if he will leave the wells so that they can be readily examined, at intervals, during the first year after they are made; and it will thus be made apparent how much they have contributed to keep the drains free and unchoked in every part of their course.

In making the under-drain where these wells were first used, it was at a time when draining tiles, at least here, were very uncommon, and it was desirable to make the drains as economically as possible. Stone I rejected, because it was too clumsy and unequal in surface, and therefore liable to cause stoppages in the drains, and could not be laid as rapidly as brick, and was, owing to the facility with which bricks could be obtained, very little, if at all, cheaper. In laying the bricks, I tried every experiment, placing them in every conceivable position, but in none to my own satisfaction. If but few bricks were used, then the drain could not be relied on as permanent, because the earth yielding at the bottom, or the weight pressing them together at top, there was danger of the falling in of some of the bricks, and so choking up the drain; or, if many bricks were used, then the expense became too great. Never having seen any draining tiles at the time the under-drain referred to was to be laid—now about fifteen years ago—but knowing very well what such tiles ought to effect, I determined to contrive something that should subserve the purpose. Accordingly, I made the models of the draining bricks or tiles described below, and a brick-maker here manufactured a

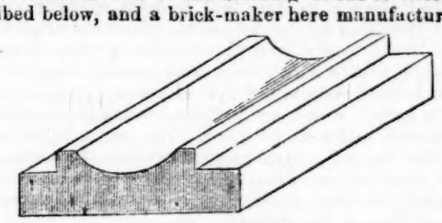


FIG. 1—BOTTOM TILE.

large number to order, for the drain in question, but never, that I am aware of, for any other. Of the figures below, No 1 represents the bottom tile, and No. 2 the top tile reversed so as to show its construction. These figures, as well as figure No. 3, are drawn by a scale of eight parts to the inch, U. S standard.

The sides of the drain are of ordinary paving or building bricks, eight inches long, four inches wide, and one inch and a half thick. The horizontal portion of the shoulder or jog, on each side of the upper side of the bottom tile, (Fig. 1,) is for the purpose of affording a firm and even base for the side bricks to rest upon, whilst the vertical portion of the same shoulder is for

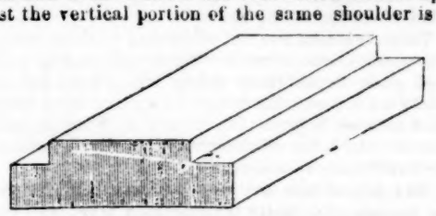


FIG. 2—TOP TILE—REVERSED.

the purpose of preventing those bricks from receiving any lateral thrust *at bottom*, and that their equidistance may be preserved.

It was thought best to leave the small space of half an inch between the edges of the concave channel and the horizontal line forming the upper edge of the vertical side of the shoulder, in order to give additional strength, and to diminish the risk of damage to the tile from rough handling

The top tile, Fig 2, which makes the cover, and is placed in position last in constructing the drain, has

shoulders similar to those of the bottom tile; but, in this case, the vertical portions are for the purpose of preventing the side bricks from losing their equi-distance in consequence of any external lateral thrust *at top*.

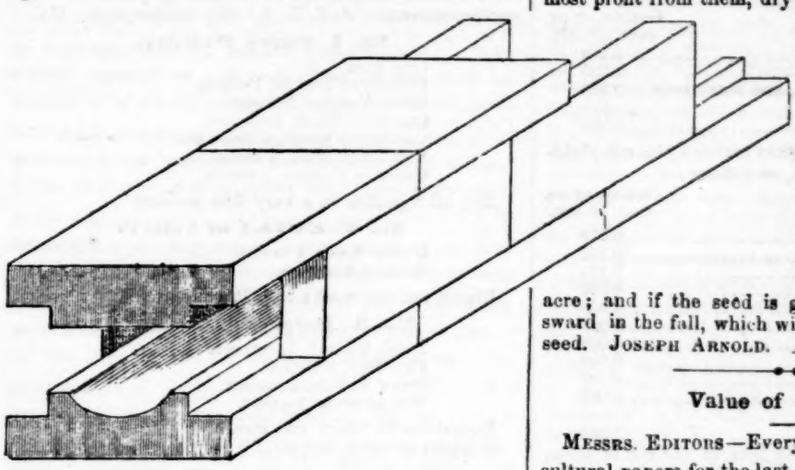


Fig 3—Tiles and Bricks in Position.

The mode in which the bottom tiles, the bricks forming the sides, and the top tiles, are laid, so as to form the drain, is shown in Fig. 3. It will be observed that the top and bottom tiles "*break-joints*" with the bricks forming the sides, thus giving great strength to the whole structure, and binding all its parts firmly together. In this particular, of "breaking joints," this mode of underdraining has the advantage over that in which the Sole, or the Horse-shoe tile are used.

The bottom tile has, underneath, a bearing surface of eight inches square, and is, in its thinnest part, one inch and a half thick, and in the thickest, two inches and a quarter,—the additional three-quarters of an inch being the heighth of the vertical portion of the shoulder. The horizontal portion of the shoulder is one inch and a half wide, being the exact width of the edge of the brick intended to rest upon it. The concave channel presents a surface when filled with water of four inches.

The top tile has an external surface above of eight inches square, and the same thickness upon its external edges as the bottom tile;—the concave channel is absent—and the projection downward, by which the shoulders are formed, has a surface of five inches wide and eight inches long, and projects three-quarters of an inch. Thus the vent of the drain is three inches and a quarter in height, with a width above the concave channel of five inches. The capacity of the drain could, of course, be increased, by setting the lateral bricks on end, but the calibre represented in fig. 3, was found sufficient. Should I have occasion to have any of these tiles made for future use, it is my intention to have the top and bottom tiles made precisely alike, with the same concave channels, and in this way the capacity will be increased without any sacrifice of strength.

My experience is, that, sooner or later, drains laid with stone, as ordinarily constructed, are liable to become choked; and that the best, and in the end the cheapest mode of making them is either with such tiles as I have described above, or else with the Horse-shoe or the Sole tile. My preference is for the Sole tile rather than for the Horse-shoe; especially where the calibre is oviform, that being the best form to be adopted in constructing all drains, whether of masonry or otherwise. When the mould is once made, the tiles I have illustrated above can be manufactured at about the same cost as ordinary brick. E. L. R. *Baltimore, Md.*

On the Use of Ashes.

Messrs. Editors—I have made use of ashes more or less for thirty-five years, and I find that I get the most profit from them, dry or leached, by spreading on the land before planting, at the rate of one bushel to the rod, together with fine manure in the hill, to give the corn the first start. In the fall sow wheat or rye the first week in October. Sow your grass seed in the month of March with a liberal hand, at the rate of 12 quarts of herds grass, one do. of red top and one do. of friz top to the acre; and if the seed is good, you will have a firm sward in the fall, which will far more than pay for the seed. Joseph Arnold. *East Harfortd, Ct.*

Value of Cob-Meal.

Messrs. Editors—Every one who has read the agricultural papers for the last few years, has undoubtedly noticed among the many disputed questions which have been discussed in those papers, the one in relation to the value of *corn-cobs* as an article of food for farm stock, and also the replies which that question has elicited, both in the affirmative and in the negative.

The individuals who gave these replies to the question proposed, in both instances, were confident that their answer was the correct one, and that those who differed from them were in an error in their views on the subject: for A. had used cob-meal to feed his stock, and he knew it was worth considerable for *feed*. B. likewise had used it, and he was satisfied that there was no goodness in it. C. had also made some use of it, and he was confident that, not only was it worthless as an article of food, but it actually injured stock that was fed with it.

Now it is presumed that the reasons given by these different individuals, were supposed by them to be conclusive on the subject, and settled the matter in controversy without any further argument on the subject. Yet there are many persons in the world, and among them some *farmers*, who hesitate to take a man's *say-so* upon subjects of importance, unless accompanied by facts to substantiate that assertion.

I knew a farmer several years ago, who, after he had shelled his corn, carried the cobs seven miles to get them ground, for the purpose of feeding his shoats with the meal. He said that all that he fed to his shoats through the winter was cob-meal, except what swill was made in the house, and he never had his shoats do any better. The value of the "swill made in the house" was not stated, and his experience did not induce me to put my shoats on cob-meal diet.

I have known others, who would shell all of the corn (which they fed to their hogs,) by pounding it in a barrel, rather than to grind the cob with the corn, because they said it did the hogs more hurt than good.

The value of corn-cobs as an article of food, has, I think, at last been established, through the agency of that great *bugbear* of so many farmers, viz., chemistry.

In the Patent Office report for 1855, is an article on the chemical analysis of corn-cobs, by Dr. Charles T. Jackson of Boston, Mass., in which the amount of nutritive matter in the cobs of Indian corn is given—also the amount of different mineral salts in them. The analysis of one variety will show nearly the composition of the others.

Analysis of the Cob of "Dutton Corn."—This corn

is cultivated in Massachusetts. It has a small yellow kernel, and a large cob, weighing 830 grains. Three hundred grains of the dried and powdered cob yielded, on analysis, of matter soluble in ether, alcohol and water, about 3¼ per cent of the cob.

	Grains, or pr. cent. of cob.
Fixed drying oil,	0.249
Sugar,	0.333
Dextrine (gum), albumen, and astringent,	2.700
Extractive matter,	3.282

When analyzed for inorganic matters, the ash yielded about 1⅜ per cent. of cob, as follows:—

	Grains, or pr. cent. of cob.
Potash,	0.410
Soda,	0.174
Silica,	0.135
Phosphate of lime,	0.042
Phosphate of magnesia,	0.020
Phosphoric acid,	0.023
Oxide of iron,	0.038
Chlorine,	0.049
Unburned carbon,	0.127
Carbonic acid and loss,	0.255
	1.353

From the analysis made by him, of the cob of seven varieties of corn, he found from 3⅛ to 3¾ pr. cent. of soluble matter in them; this soluble matter I suppose may be considered exclusively nutriment, or food, as well as a small portion of the inorganic substances, as it is well known the bones of the animal system are composed principally of inorganic substances, most of them found in the above analysis.

It will be seen by the analysis given, that the corn-cob contains a small amount of food, and the thing to be decided by individuals is, whether it is an object to make use of substances containing no more value than cobs, to feed farm stock with.

This, I think, will depend on circumstances. No one will deny that it is for the interest of every farmer to provide an abundant supply of good fodder for his domestic animals, yet every farmer is in the practice of feeding his straw and corn-stalks to his stock, and I think if the true value of a large portion of this straw was known, it would be as small, if not less, than cobs.

For my own part, I do not think that it is economy for farmers to make much dependance on *straw* and *cobs* to winter their stock on; yet I think they both may be used to some profit, if fed in connection with other and better kinds of fodder. In winters and springs, when there is a scarcity of feed, and a supply of other kinds cannot be obtained except at exorbitant prices, and stock if sold at all, must be disposed of at ruinous rates, there would be much benefit derived from feeding cob-meal, as well as other inferior kinds of fodder. C. T. ALVORD. *Wilmington, Vt.*

MEASURING HAY.—The editor of the *New-Jersey Farmer* gives his rule, based on a large experience, for measuring hay. He formerly weighed his hay—but repeated trials taught him that this was unnecessary. Take a mow which has lain through the winter, and ascertain its amount in cubic feet, (multiplying its width by its depth, and that product by its length,) and then divide by 700, and the quotient gives the number of tons. The upper third takes 800 feet to the ton; the lower 600 feet, making the mean 700 feet. If the mow is only five or six feet deep, however, it takes an average of 800 feet to the ton.

SLOW TO MOVE.—About two years ago a series of articles was published in the *Ohio Farmer* on the subject of draining. The editor says that he had hoped that, ere this time, the manufacture of draining tile would have been introduced in different portions of Ohio; but up to this moment, there is not a single tile machine in that State, so far as he knows. He advises draining with stone or brush.

Domestic Economy.

EDITORS OF THE CULT. AND CO. GENT.—I send you six valuable recipes, for the benefit of yourselves and correspondents. J. F. D. L. *Greensborough, Md.*

No. 1—Curry Powder.

Curcuma, ½ lb.
Powdered Ginger, 1 ounce.
Black Pepper, 2 ounces.
Cummen Seeds, 4 ounces.
Cardamon Seeds, 4 drachms.
Powdered Mace, 4 drachms.
Cayenne Pepper, 1 ounce.

Mix all together in a very fine powder.

No. 2—Extract of Celery.

Celery Seeds, ½ ounce
Brandy, 4 ounces.

Digest for two weeks and filter.

No. 3—Extract of Rennet.

Fresh Rennet, 12 ounces.
Fine Salt, 2 ounces.
Proof Spirits, 2 ounces.
White Wine, 1 quart.

Digest for 24 hours and strain.
A quart of milk, requires 2 or 3 teaspoonfuls.

No. 4—Burning Fluid.

Alcohol, 3 gallons.
Camphine, 1 gallon.
Gum Camphor, 1 ounce.

Dissolve the camphor in the alcohol, and then mix.

No. 5—Water Proof for Boots.

Rosin, 4 drachms.
Lard, 1 ounce.

Mix and melt them together over a slow fire.

No. 6—Black Varnish for Leather.

Gum Shellac, 1 ounce.
Gum Juniper, 1 ounce.
Lamp Black, 1 ounce.
Rosin, 1 ounce.
Venice Turpentine, ½ ounce.
Spirits of Wine, 1 lb.

Mix and let it stand in a warm place for a few days.

Hard Sap.

MESSRS. EDITORS—My wife desires me to answer for her the inquiry in the Country Gentleman, as to "how to make hard soap," by giving you a recipe which she says provides the "*very best.*"

Take 3 pailfulls (twelve-quart pails) of common soft soap, and 5 pints of salt. Heat them together and stir them well and thoroughly. Set the mixture aside to cool and harden. Take the hard soap from the top, and put to it one and a half pailfulls of *weak lye* and two and a half pints of salt. Heat, and stir well together, and cool as before. Again remove the soap, melt it and pour it into any shaped moulds you choose. AGRICOLA.

How to Harden Tallow.

MESSRS. EDITORS—I send you a recipe for hardening soft tallow, so as to make mould candles.

For 30 pounds of tallow take half a pound of alum—dissolve in a little water—(alum will not melt in tallow)—pour into the tallow—let it come to a boil—skim and then add two pounds of beeswax. The alum cleanses the tallow from all impurities. With the addition of the above you can add one quarter lard to usually hard tallow, but more beeswax will do no harm. C. S. HARD. *Arlington, Vt.*

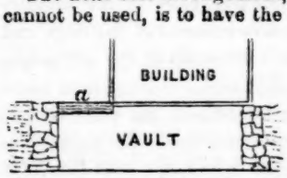
Carrot Pie.

Wash and scrape the carrots, boil till soft, sift and prepare like pumpkin pies; many think them superior to pumpkins—they may be made with or without eggs. E. L.

Management of Home-Made Poudrette.

We have frequently had inquiries on this subject, and in answering that of a subscriber, now before us, we may possibly repeat some hints given before, but we hope they will not come amiss. In order to manage night soil to the best advantage, every facility should be procured. One of the most important is a provision for its removal. This may be effected in two ways. One, is to provide a tight plank box, say a foot deep, on scantling runners, to which a horse may be readily attached, and the whole drawn off to the compost heap. It may be readily emptied, by turning it over by means of a chain attached to a hook or bolt on one side, with the assistance of two or three hands. The runners should rest on two pieces of durable plank placed under the privy, to prevent decay on the ground, and to facilitate drawing off. The ground back of the building should be a little lower if practicable, to give space for drawing out and returning this box. A door, with hinges, so as to open upwards, shuts this box in closely. Daily additions of some drying absorbent will keep the whole in a condition easy to be removed and worked up into a compost. Charcoal, pulverized, is perhaps the best absorbent, but dried and powdered loam, coal ashes, or dried peat or muck, answer an excellent purpose. The importance of small daily additions, so as to become thoroughly intermixed, cannot be too much insisted on. The amount should be such as to destroy all odor and to render the compound easily reduced to powder In order to render the box durable and tight, it should receive two or three coats of warm gas tar, which for this purpose has been found to answer admirably.

The next best arrangement, where a box is not or cannot be used, is to have the vault extend backwards two or three feet beyond the building, so that the contents may be easily shovelled out. The annexed figure shows a section of this arrangement, *a*, being the trap-door covering that part through which the deposits are drawn or thrown out.



Warming and Ventilating.

Editors Cult. and Co. Gent.—I find in the April No. of the Cultivator, that P. R. A. wishes to learn all he can on the subject of warming and ventilating his house, that he is about to build, combining convenience, safety and economy.

I know of no better way to warm the rooms on the ground floor than by means of good stoves. I would rather keep five or six stoves in operation than one furnace.* Chambers can be warmed by means of Registers over head, in the sitting-room, for instance, going through the chamber floor into as many rooms as come in part directly over it. I have two rooms over my sitting-room that I can warm in a very short time as comfortable as the sitting-room, by opening the slats of the Register. I keep the heat below by closing them. One chimney at least should be commenced on the cellar bottom, so as to ventilate the cellar, by making a hole 5 or 6 inches square near the floor, to carry off the bad air coming from vegetables, decaying matter, &c. My chambers are ventilated through the tunnels, the lower rooms by Registers, and the upper ones warmed by them. They are of wood; a plain box deep enough to go through the chamber floor between the joists, and come down so as to have the moulding on the bottom of the Register's catch, or lap on the plastering. The moulding should be about two and a half inches wide, or according to your taste, serving as an ornament, and to put the slats in, also covering the ragged edges of the plaster, when they are put in after the house is built,—in that case, the hole through the lath and plaster should be cut nearly half an inch larger than the box, and just as large through the floor. The slats I used were blind slats, say four or five to a register, opening and closing them just as blinds are. The top of the box should be smoothed off level with the floor, and hard wood slats, three-eights of an inch in thickness, and one inch and a quarter wide, should be put in to keep people from stepping through, or a cast-iron grate, just as one fancies. A good many people here have had them put in during the last winter, and taken down their chamber stoves, giving good satisfaction in all cases. All the objection that I have heard was, "that the children would n't say good night till they got up stairs, so they could say it through the register." G. H. Akins.
Berkshire, N. Y.

Early Bearing Varieties of the Apple.

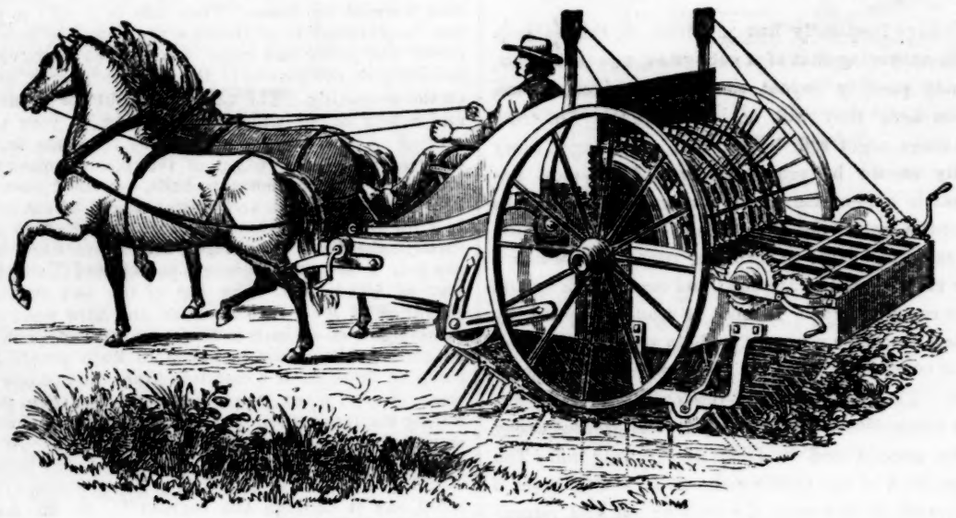
Messrs. Editors—I have been a little surprised to see the great number of blossoms on our three year old apple trees in the nursery. I counted a short row of Early Harvest, and out of 100 trees, 25 are in bloom; of Sweet Romanite 166, 77 in bloom; of Virginia Greening 258, 111 in bloom. These are root-grafted; the root four years old, the tree three. The Virginia Greening, sometimes called Ross' Green, is not generally cultivated. I do not find it described in Thomas' Fruit Book, but in Elliot's it is described as "not quite very good"—we call it very good; and Elliot says its season "from December to March"—we say, March to August; a very long keeper, a hardy tree, and a fair grower. I also find two year old trees of this variety in bloom. With all these qualities, we esteem it very highly. The Sweet Romanite is a very hardy tree and thrifty grower; the fruit a long keeper—good for baking in spring and summer. The Sweet June is also a thrifty grower, hardy, and an early bearer. Some of our three year olds are now in bloom. The most thrifty growing tree we have is the White Rambo—nine feet high in three years—whole rows will average eight feet. This new variety was described in the Country Gent. last fall or winter.

I see a few blossoms on my peach trees. Is not this very remarkable, after such a winter, touching 30° below zero? Though I believe it was not below 26° on this high land.

It is often suspected by eastern men, that fruit trees grow too fast in the West. Well, they are like the Durham cattle, they fill the barrel when young, and I have no doubt they will fill twice as many barrels in their life time as an eastern slow grower.

It is often remarked by eastern tree-peddlers in the West, that our western trees would not bear as young as the eastern, because the scions are generally taken from nursery trees which are not bearing. Our scions were nearly all taken from young nursery trees. Can any one give a better account of scions taken from old trees? We should be glad to see some other experience on this subject. I place these facts over my own name, and your paper circulates largely in my neighborhood, besides I have plenty of witnesses. Suel Foster.
Muscatine Nursery, Iowa, May 25.

* This remark is correct as applied to a *wood* furnace; but a coal furnace is more easily managed. Eds.



EVANS' ROTARY TERRACULTOR.

We present above a cut of this implement, the inventors and owners of which are sanguine in their hopes of its ultimately superseding the plow as a means of preparing the soil for crops. Some of our readers may perhaps have seen it in operation at the last State Fair at Watertown, where it was tried with very good success. It is intended particularly for prairie soils, where a large surface is to be tilled, and labor is expensive and difficult to obtain. It is claimed that with a four horse team and one driver, the Terracultor "will thoroughly pulverise the earth to the depth of ten inches and the width of four feet—leaving the soil mellower than it is now usually found after plowing, sub-soiling, cross plowing and harrowing—at the same time *sowing the seed*, where seed sowing is desired—thus performing the equivalent of four or five of the present processes, and four times the quantity at each passage over the ground—completing the whole routine of *preparing land for crops* (when seed is broad-cast,) *by passing once over the field*—to the extent of from *six to eight acres per day*—and without the damage to subsoil occasioned by the pressure of the plow and subsoiler." Persons interested can obtain further information by addressing HENRY O'REILLY, Esq., either at Chicago, Ill., Eddyville, Iowa, or New-York City.

The Bean as a Fallow Crop.

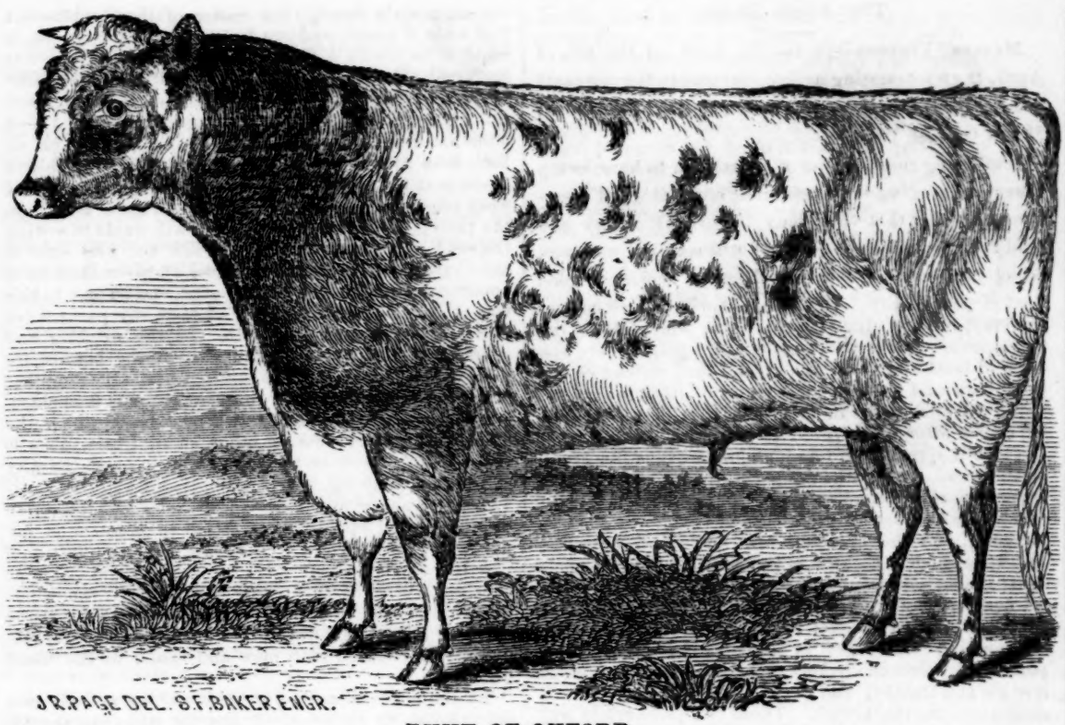
Since the great loss of time occasioned by the adoption of naked fallows has been found by farmers to be unnecessary, several modes of cropping the land before sowing wheat, have been variously substituted, with greater or less success. Peas were formerly much esteemed for this purpose, but of late years this crop has deteriorated in many localities. Corn, which some years since was extensively adopted by many good farmers, has fallen into disuse since the insect has rendered it so imperative to sow early, and in the best prepared soil. It is not improbable, however, that by planting very early varieties, it may ripen sufficiently before the close of summer to enable the farmer to sow his wheat early enough, and to apply manure before plowing, if the corn has not been manured in spring.

At present, the *bean* crop seems to stand at the head of all others for this purpose, in some districts, if suitable varieties are chosen, and proper management given. We are informed by Joshua Mekeel of Tompkins Co., N. Y., that the Morgan bean of Ohio has of late years been cultivated with great success in his neighborhood. It is a large white bean, of the bush form, exceedingly prolific, and sells for a good price in market. It does best on a strong, rich soil, and is cultivated both in hills and in drills, the latter being preferred, and the crop is easily planted by means of a horse planting machine, about the usual time for planting corn. It ripens early enough before the close of the summer months, to admit of the easy removal of the crop, and the proper manuring and cultivation of the soil before sowing wheat. The product varies from 25 to 50 bushels per acre. When first introduced, the price of this variety in market was about one dollar per bushel, but of late years one dollar and a half has been the more common value. It is bought chiefly in New-York for supplying ships. It is also found to serve an excellent purpose as food for sheep and lambs, which thrive admirably upon it, and which are the only farm animals that will eat beans without first grinding and mixing with other grain.

Remedy for a Wet Soil.

MESSRS. EDITORS—Please give me your opinion as to the best mode of cultivating a meadow, which has a clay subsoil, and is usually too wet to work in any kind of season in the spring, but does not stand a drouth well. It has been almost impossible to get a good stock on it of late years; the young plants are either killed by the drouth, or heaved out by the frost during the winter. I suppose you will say, drain it; but will it pay when the land is worth but $20 per acre, wages very high, no railroads near, and generally rather a poor market for produce? What would be the effects of a subsoil plow? A FRANKLIN SUBSCRIBER.

The effect of the subsoil plow on this land, would be to loosen it *temporarily*—but as the whole matter thus loosened would be thoroughly soaked by water the following fall and spring, it would become compact-



DUKE OF OXFORD.

Winner of first prize at Elmira, in 1855, and also winner of first prize at the Madison Co. Fair, same year.

Roan; calved July 27, 1855. Bred by Col. L. G. MORRIS, Fordham, Westchester Co., N. Y. The property of S. P. CHAPMAN, Mount Pleasant Farm, Clockville, Madison Co., N. Y. Got by Duke of Gloster, (11382.) Dam [Oxford 17th,] by Lamartine, (11662)—g. d. [Oxford 10th,] by 3d Duke of York, (10166)—gr. g. d. [Oxford 5th,] by Duke of Northumberland, (1940)—gr. gr. g. d. [Oxford 2d,] by Short Tail, (2621.)—gr. gr. gr. g. d. [Matchem Cow,] by Matchem, (2281.)—gr. gr. gr. gr. g. d. by Young Wynard, (2859.)

Mr. CHAPMAN has recently made a large addition to his herd in the purchase of six of the cows imported by Messrs. Morris & Becar These animals were purchased of Mr. Thorne some six weeks since, and may now be seen at the Mount Pleasant Farm They are Romelia, Apricott, Lady Boothe, Garland 2d, Jacintha and Beauty. Apricott is in calf to Duke of Gloster (11382.) The others are all bred to Mr. Thorne's 2d Grand Duke (12961)

Mr. Chapman requests us to say that it will give him pleasure to meet persons at the railway station, (Canastota,) who may wish to look over the herd. The farm is six miles from the station.

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ed together nearly as closely as ever. If it were *thoroughly underdrained*,—say with a good three feet drain every two rods, cut the shortest way down the hill, in whatever direction this may be,—the water would pass off rapidly through the subsoiled and loosened particles, into the channels of the ditches, before it could accumulate enough to form a mortar-bed of the soil. In this case, the subsoiling need not be repeated for years; or, if a repetition should prove necessary, the slight adhesion of the particles would render the operation a very easy one. Subsoiling greatly facilitates the drainage of the land, if a channel for the escape of the water is near at hand; but does not help much, if the water must remain.

We have no doubt that the thorough drainage of the land in question would remove all the trouble—would render it loose and easily worked in the spring, and that the increased earliness alone in the planting of the crop would in a few years repay all the expense; the increased *amount* of the crop, would again repay it; the economy of labor, occasioned by a loose, friable earth to work, instead of a hard, cracked, and crusty surface, would still again repay it; and the advantage of being able to commence labor on it *early*, and not being excessively hurried at the last moment,—doing the work well in one case, and badly in the other,—would not be the least advantage. Altogether, the real value of the land, so far as profit is concerned, would be far more than doubled, the very moment the draining was completed. There is still another advantage we have not mentioned; and that is, while the drained land would be relieved of its surplus water, it would endure severe drouth incomparably better, if kept deep and loose, than if baked and hardened as it must be without draining.

We should much prefer the profits of *one* well drained acre of such soil, to *three* without it, and if we could effect the operation in no other way, we would sell two-thirds of it. If it is now too poor, manure will be of little use applied to a wet and soaked soil; while instances may be numerously cited of the great advantages of enriching a drained soil, and cases have occurred where the manure which had been for years unsuccessfully applied to soaked lands, has been immediately made useful in a high degree by the simple process of ditching.

The Apple Borer.

MESSRS. EDITORS—In the Co. Gent. of the 6th of April, is an interesting article, devoted to the aforesaid famous (or rather infamous) insect, by T. V. PETICOLAS, Mount Carmel, Ohio.

Presuming that all your readers wish to hear every theory concerning this pestiferous entomological character, in order that they may "prove all things and hold fast that which is good," I will mention a theory which has some respectable adherents, besides a good deal of plausibility. I do this, not with a view to controversy, but to elicit truth. Some affirm that the borer never attacks a tree except at a point where the bark at least is already dead; and that instead of the dead bark and wood in the vicinity of its depredations being the effect, it is in fact the cause of the attack. Of course after the borer once obtains a lodgment in the tree it spreads the mischief and hastens the decay of the tree. Those who adopt this theory, say that the borer generally attacks the tree on the south-west side; and the reason assigned for this, is, that while the tree is young, and the branches few and small, affording but little shade, the bark is frequently killed in spots by the afternoon sun; and as soon as there is the smallest dead spot to be found, the borer is into it, and once there, he spreads disaster all around him.

Assuming this theory to be true, the remedy proposed is simple and obvious. First, branch the tree as low as practicable; and secondly, in planting, lean it slightly to the south-west. These two precautions will afford very great protection from the scorching rays of a south-western sun. J. E SPILMAN. *Nicholasville, Ky.*

A Garden for a Farmer.

At this busy season of the year, I need not waste time in urging every farmer to attend to his garden, and if he has none—which I can hardly conceive of an intelligent man—then let the error be rectified immediately. There are doubtless many farmers who have gardens of greater or less extent, who by reason of an inconvenient mode of arrangement are subjected to more trouble in their cultivation than necessary, and to such persons I wish to make a few suggestions, which are the result of my own experience in a vegetable or farm garden. Most gardens being either square or of some rectangular shape, the first thing after a deep and thorough plowing, or if the plot be small, a spading of two spits deep, is to lay off a border not less than three or more than five feet wide, all around next the fence, and a path sufficiently wide for a wheelbarrow—say 4 feet; this border to be cultivated this season with peas, beans, &c., and in the fall to be filled up with currants, gooseberries, raspberries, or if the garden be an acre in extent, then the border may be made a fruit border and filled with dwarf pear, cherry, and other trees. I remark here a general error in making paths in a garden; they are in wet weather mere ditches, and serve only two purposes—the one to drain off the moisture which should be retained in the seed-beds, and the other to make the paths impassable after a shower; moreover it is much more troublesome to keep a sunken path clean. My practice, therefore, is where walks are graded, to make them in the center about two inches higher, where they are five feet wide, than the adjoining beds. In this way they are always dry, and if instead of gravel they are made of earth, as is usual in farm gardens, I raise the walks at first about three inches in the middle, and roll them with a hard roller, —which any farmer can make from a log at his woodpile in ten minutes,—and I find them when solid about the right height—say two inches.

After having laid off the border and paths, I make one main walk through the center of the garden—six feet wide if small, and ten feet wide if so large as to require the use of a cart—which should have a gate at each end. I then proceed to lay off drills for the different vegetables I desire to cultivate, at right angles to this main walk, as follows: I procure a board 1 foot wide and from 13 to 20 feet long, and work it off on both sides into spaces of six inches; I lay this board down next the border path, and my first drill, which I work along the edge of the board, will be a foot from the path; the marks on the board will guide in sowing the seed at equal distances. When the first drill is sowed the board is turned over, which gives the line of another drill the width of the board, and so on; in this way I sow the whole garden without any paths other than the border and main path. In the weeding and subsequent cultivation of the garden, the boards are used in the same way as in sowing, and all trampling of the earth or crushing of the young plants is avoided.

It is customary to make a fruit border along the main walk, of currants or other small fruit. This is objectionable, because they are found to be in the way of plowing, mowing, and other operations in the cultivation. I am a firm believer in deep and thorough plowing, and I apply my principle to practice in my garden in this way. I trench and dig one-quarter of it to the gravel—about three feet; mowing at the same time each year, so that every fourth year the whole garden has been subsoiled. This course enables me to compare results, one-quarter being subsoiled and three-quarters cultivated with plow and spade in the usual way.

By the above described mode it will be noticed that only two walks are required, and the space and trouble of all smaller paths avoided. J. S. SHIPMAN. *Farmingdale, L. I.*

Culture of the Pea Nut.

MESSRS. EDS.—I saw in the Country Gentleman of April 23d, a few lines soliciting information in regard to the cultivation of the Pea nut, (or as we here call it the Ground pea,) which, though it may be answered before this, yet as they are cultivated to a considerable extent in t is and the adjoining counties, perhaps two answers will be better than one. My manner of cultivation is as follows:

First choose a clean piece of land, *naturally* rich—a medium soil, neither stiff nor very light; plow and harrow well; then mark off rows as shallow as possible, two feet nine inches apart, and plant the seed eighteen inches apart in the rows with one or two *kernels* in the hill (which will be about 1½ bushels to an acre), covering not more than one inch deep. A liberal application of lime or ashes sowed over the land before harrowing, will be found highly beneficial to the crop.

Time of planting from the 1st to the 20th of May.

Plow and hoe for the first time, as soon as necessary; for the second and last time as soon as the bloom commences to appear (which we never cover), perfectly leveling the ground. Harvest before frost, when if properly cured, the vines will be excellent fodder. The pea nuts should be perfectly dried before being housed, or they will mould. F. L. M. *Cedar Grove, Surry Co., Va.*

Another Cure for Warts.

MESSRS. EDITORS—I notice in your last Cultivator, an inquiry from R. W., for the cure of warts on horses. As I have been successful in several cases, permit me to inform him of my plan of treatment, which is as follows: First cut off the wart with a sharp knife; then wash it thoroughly with a strong solution of copperas, which will prove an effectual cure. T. K. REDDISH *Warren Co., Ky.*

Dairy Management and Butter Making.

We trust that most of the readers of the COUNTRY GENTLEMAN have read with care and attention our report and review of Mr. HORSFALL'S feeding and management of his cows, both for the maintenance of their condition and for the greatest yield of milk and butter. We do not suppose there are, comparatively speaking, many of our American farmers that can or will pursue the same course in the care and management of their dairy stock that Mr. H. does; but his statements afford many hints and suggestions that may be profitably adopted by farmers and dairymen in this country. As a general thing, our farmers are sadly negligent in the care of their cows. As far as our acquaintance among farmers extends, we find but very few that make any provision for extra feeding of their cows during the usually dry and warm months of August and September. The short dried herbage of the pasture is all they have to subsist upon. Under such treatment there is always a falling off of both flesh and milk. Some few farmers of our acquaintance feed their cows with green corn stalks; but this is too often done without either system or regularity. Irregular feeding is rather detrimental than otherwise. Some few others sow corn broadcast, or drill it in rows for soiling, or rather feeding their cows night and morning. We are not sure that green corn fodder is the best kind of succulent food for milch cows.

A few years since, the Essex Co. (Mass.) Ag. Society appointed an able committee to report on the "comparative value of crops." One of the committee, Mr. WARE of Salem, had had great experience "in distributing several tons of this kind of fodder to a flock of thirty or forty cows, *daily*, for several successive years, during the season of its production." He had great doubts of its value, especially in increasing the quantity of milk. But the committee say, "We have found the *sugar beet* one of the very best vegetables for the production of milk; far superior to the carrot." This Report dated Nov, 1848.

In the Essex Co. Ag. Transactions of 1853, is published a somewhat lengthy account of experiments by W. F. PORTER of Bradford, Mass., in feeding milch cows with different kinds of food, in addition to hay. Mr. P. regularly sells his milk in Haverhill. But we must greatly abridge his report. He says, "In feeding twelve new milch cows (in January,) with two and one half bushels of carrots, morning and night, for seven days, the increase of milk during the week was not quite two gallons over the yield when fed on hay alone. The next seven days fed only hay. The result was, no diminution. Then fed with carrots as before, the next seven days, and there was less than one gallon increase." He came to the conclusion that carrots were not worth raising for milch cows.

The next winter, (25th December.) Mr. P. commenced a series of experiments by selecting three of his best cows, as nearly equal in size, condition, and goodness as possible; two of them dropped their calves 25th of November, the other 2d December. The experiment was continued eight weeks, giving to each cow the same money's worth of the different kinds of feed by weight, as the same cost at the time, viz: shorts $26 per ton—oil meal $30 per ton—Indian meal eighty cents per bushel of fifty pounds—rye meal $1 per bushel of fifty pounds—giving to each cow fifty-two and a half cents worth per week—seven and one-half cents worth per day.

The first week forty-two pounds of shorts were weighed for each cow; fed night and morning, being about four and a half cents each time, wet with six quarts of water two hours before feeding.

Second week, thirty-five pounds oil-meal per week, being about four quarts per day; fed same as shorts.

Third week, thirty-two pounds thirteen ounces of Indian meal for each cow, wet and fed the same, being about three quarts per day.

Fourth week, twenty-six pounds four ounces of rye meal for each cow, being about two and a half-quarts per day, wet and fed as above.

The result of these experiments showed that Indian meal possesses the highest value for producing milk, differing however, but little from oil meal.

Three hundred and fifty pounds of English and seventy pounds of salt hay were weighed and fed to the cows each week. When the cows were fed on shorts and rye meal, the whole quantity was consumed; when fed on oil and Indian meal, an average of fifty eight pounds of English hay per week was not consumed.

The above statement indicates that the oil and corn meal contained more nutritive matter than the same money value of shorts and rye meal, beside affording more milk.

But Mr. PORTER'S experiments relate only to the increase of milk in quantity. Nothing is said in reference to the condition of the cows, or of the quality of the milk for butter. But still they afford some useful hints to those engaged in producing milk for sale. The relative prices of the several kinds of food used varies greatly in different years, and in different places—therefore Mr. P's experiments show which kind of meal may be most profitably used in different places and seasons. The report of the committee alluded to in this, seems to refer principally to the production of milk. Whether cornstalks increase the "flesh and tallow" of the cows, or the quality of the milk is not fully ascertained. We are aware that farmers who have experimented with green corn fodder, carrots, &c., differ much in their opinions, in regard to the use and value of them in the production of milk and butter.

Mr. HORSFALL, in his investigations, had several objects in view, viz., to keep up or increase the condition of his cows; for the greater production of milk and butter, and increased value of the manure, and a satisfactory profit. How well he succeeded in these objects we need not here repeat, for they are already written in the columns of the Co. Gent. But we wish particularly to call the attention of dairymen to the fact that "the food which Mr. H. was led to fix upon to carry out these purposes after various modifications, has for the last two seasons consisted of rape cake, five pounds, and bran, two pounds, for each cow, mixed with a sufficient quantity of bean straw, oat straw, and shells of oats, in equal proportions, to supply them three times a day with as much as they will eat. The whole of the materials are moistened and blended together, and after being well steamed, are given to the animals in a warm state. In addition, from one to one and a half pounds of bean meal is given to each cow, in proportion to their yield of milk: those in full milk getting two pounds per day, others but little; the bean meal is mixed with the steamed food on its being dealt out separately. When this is eaten up, green food is given, consisting of cabbages from October to December, kohl rabi till February, and mangold till grass time. With a view to nicety of flavor, green food is limited to 30 to 35 lbs per day to each. After each feed, four pounds of meadow hay, or twelve pounds per day, is given to each cow, and they are allowed water twice per day to the extent they will drink."

We think it is a question of some interest to dairymen near cities, manufacturing places, and large villages, (who generally obtain an extra price for "family butter,") how far they can profitably in their dairy management, pursue a similar course to that of Mr. Horsfall's. To strictly follow his system of feeding, here, is out of the question, for we have not the rape cake, (English Horse) bean straw or bean meal—but we have substitutes that perhaps will answer equally well.

In a late number of the *Irish Farmer's Gazette*, "A Subscriber" inquires the comparative value between rape cake and oil cake for feeding lambs and

sheep, and also their comparative value when given to stall-fed cattle. Answer: "There is but trifling difference in the composition of rape cake and linseed cake, so their nutritive value is much the same, but cattle do not take it so readily as they do linseed cake, from its flavor."

There are many sections of our country where oil cake can readily be obtained, which, doubtless, will answer the purpose as well as rape cake.

According to Mr. PORTER'S experiment, Indian meal, for the production of milk, is a little ahead of oil cake, and perhaps might answer in this system of feeding quite as well as either of the cakes. Instead of bean straw, we do not see why early cut, well cured clover hay might not be as good as the bean straw; we have the oat straw and chaff; pea or oat meal might take the place of the pound or pound and a half of bean meal; cabbage and rape can be grown here as well as in England. Turnips are objectionable on account of their flavor. The kohl rabi, we *know*, can be profitably grown here, and much cheaper than turnips; and to carry out the system, we can raise mangolds, grow hay, and have water.

The committee alluded to in this, said, "we have found the *sugar beet* one of the very best vegetables for the production of milk." Possibly the great amount of saccharine matter contained in this beet, may have a favorable effect in the production of milk. If so, perhaps the *Chinese sugar cane* and the *Doorah corn*, from the sweetness of the juice of their stalks, might prove a valuable addition to the steamed "bill of fare" we have sketched out.

We trust many of our intelligent, enterprising farmers and dairymen will give Mr. Horsfall's system a fair trial. We know there is more care and labor in thus managing a dairy, than there is usually bestowed upon them by our farmers, but yet, notwithstanding, it may pay better in the end.

Sawdust for Litter.

MESSRS. EDITORS—Much has been said in the agricultural papers of late in favor of sawdust for littering stables, until it seems to be generally conceded to be a valuable discovery. That it may act as an absorbent and also make a comfortable bed for animals may be very true, but whether it will increase the value of the manure heap is a point which seems for the most part to have been lost sight of. It is true the public have been cautioned against using *pine* sawdust. But what is there peculiar to pine that would make it injurious to the manure? I believe that sawdust from any variety of wood, applied in its fresh state to land, would be injurious, and the man who should attempt to grow an acre of *grain* with it would require as many loads of it as it would of "snow-balls to boil a tea-kettle." I have noticed in two instances where timber had been hewed and framed, that nothing would grow for a year or two after, although the land was otherwise in good condition and well cultivated. The timber in both cases was mostly oak, so that the tannin might perhaps have had some influence. Yet a similar effect to some extent, is produced by the application of chip manure not thoroughly decomposed. But I have yet to learn that any kind of wood, pine included, does not make good manure when well rotted, for any kind of land or crop.

Is not the injurious effect of pine owing to the acid of the wood? If so, then chestnut must be much the most injurious. But will not the mixing it with the stable manure prevent the evil? I think it may, if the heap is allowed to ferment, being kept the meantime thoroughly wet. It is a great mistake of many farmers to allow their manure to "fire-fang," and where water is convenient, is entirely unnecessary in order to a perfect decomposition. My practice has been with coarse strawy manure, to pile it up with swamp muck in alternate layers, in the proportion of one load of the former to three of the latter. Then by attaching a pipe to the one that supplies my water trough, wet every part thoroughly. Fermentation soon takes place, and in a few weeks does the work as effectually as "Bommer's method," and at a much less cost. It is sometimes necessary to apply the water the second time. By this plan the ammonia is not lost as is the case when a dry fermentation is allowed, neither does the heap dwindle down to a mere point. I think that even sawdust might by this method be made into a valuable manure whether it had been used for a litter or not; but without decomposing in some way will not those who apply it very freely to their land be likely to find their crops rather short for the first year or two? H. V. WELTON. *Waterbury, Ct.*

Wolf Teeth Once More.

MESSRS. EDITORS—Having noticed in your issue of the 14th an article on wolf teeth in horses, I take the liberty of offering you my experience and convictions on the subject.

In the spring of 1851, I noticed a weakness of the eye in one of my horses, (a mare of five years,) but thinking she had injured the organ in the manger, applied simple remedies, such as cold water, &c, with little effect. The weakness continued, off and on, during the early summer, sometimes disappearing, and at others returning. I left home for Virginia in August, and soon after heard that she had irreparably lost one eye, and that the other was likely to follow. Happening one morning to be about the stables at Sweet Springs, I saw a horse undergoing an operation which, upon inquiry, I was told was that of removing wolf teeth. I had heard of this before, but confess I was always as great a skeptic as on the subject of hooks.* Knowing, however, what horse masters the Virginians were, I conversed with the operator, the result of which was a determination to try the experiment upon my return home. Arriving about first of October, I commenced an examination, and consulted a naturalist as well as a farrier. The former hooted at the idea as preposterous, bringing to his aid Cuvier, Agassiz, and a host of others. Not satisfied however, to lose my pet, I set about extracting two small teeth, situated between the first grinder and the tusk, and in juxtoposition to the former, apparently out of place, and more like excrescences of bone. The task, was an easy one, being performed with a pair of forceps, the animal evincing no other symptoms of pain than a toss of the head. To my delight I found the weak eye gaining strength every day till perfectly restored. Alas for the other, 't was too late.

I make this statement for the purpose of eliciting discussion and information upon the subject, should you deem it worthy a place in your journal.

Will not some of your correspondents give us a chapter on hooks,* and another some information as to the prevention or cure of hollow hoof? CHARLESTONIAN. *South Carolina.*

HEREFORD CATTLE.—SANFORD HOWARD, in the last No. of the Boston Cultivator, speaks of this breed of cattle as follows—"We believe the Hereford breed of cattle, for the northern section of the country, especially where beef is a prominent object, is one of the most useful that has been introduced. We believe that no breed has given better satisfaction wherever it has been tried. They are more hardy than the Short Horns, do better on short or coarse fair, and make better beef. As to dairy properties, they are as good as any breed which has an equal tendency to fatten. The half-bloods give good satisfaction as milch cows."

Value of Different Kinds of Food for Stock.

MESSRS. EDITORS—I frequently notice in the Country Gentleman, inquiries about the value of various kinds of food for stock, and also the comparative value of different articles of food for feeding purposes.

These are questions of great importance to farmers, and are much more easily asked than answered, notwithstanding the satisfactory solution of this problem in agriculture, would undoubtedly be of equal, if not of more importance to the farmer, than that of any other one relating to his profession.

It must be a long time ere this subject will be sufficiently tested to furnish any reliable data that can be depended upon by the farmer, and indeed it is almost certain, that the facts in relation to this matter will never be sufficiently determined to enable any one, at all times, to know which are the best and most profitable kinds of food to feed stock with, at various times and under different circumstances. There seem to be but two ways in which this subject can be decided, (and it may be necessary to use them together;) one is, by an analysis of the various articles used for food, thereby ascertaining the amount of nutriment contained in each kind; the other is, by feeding the different kinds of food to different kinds of stock, under all the various circumstances and situations in which it is found necessary to do it, in raising stock in different parts of the country. The first method has been repeatedly tried by chemists, both in this country and in Europe, and the results of their investigations have been published from time to time, and though differing somewhat in their calculations, yet they agree on the main points, and may be relied on for all practicable purposes in which it is necessary to apply them.

The second method has also been experimented upon to a considerable extent, but with much more variable results, as the nature of the case would imply. There are so many causes which operate on experiments of this kind, that it will necessarily take more time, labor and expense to perfect them, than any one has yet been disposed to give, although many careful experiments have been made, and much valuable information elicited. A knowledge of the composition of different kinds of food, with careful attention in feeding, and close observation of the results which follow, would seem to be the only criterion by which the farmer is to be guided in this department of his business, at least for the present.

The following items in relation to the comparative value of different kinds of food, I have selected from what I have seen published at different times, and which may be of benefit to some of your numerous readers: 100 lbs. of good English hay are equal to 275 lbs. of green Indian corn, 442 do. of rye straw, 264 do oat stray, 253 do. pea straw, 167 do wheat, pea and oat chaff, 178 do. rye and barley chaff, 54 do. rye, 56 do. wheat, 59 do. oats, 46 do. peas and beans, 64 do. buckwheat, 55 do. Indian corn, 68 do. acorns, 105 do. wheat bran, 108 do rye bran, 229 do. mangel wurtzels, 520 do. turnips, 101 do. raw potatoes; 32 lbs. of raw potatoes are said to be equal to 14 lbs. of boiled potatoes. The standard by which the value of these articles is determined, is the amount of nutriment contained in each of them. The profit to be derived from feeding them would depend in a measure on the cost of the different articles, and also the different circumstances under which they were used.

One item of considerable importance to the farmer, is often left out in his calculations of profit and loss, and that is, that the *manure* made from animals that are fed on *rich* food, is worth much more than that made by them when they are fed on *poor* food. It is an established agricultural axiom, that the better the food that an animal is fed with, the better the manure from it. I think it is generally conceded by those farmers who have much experience in the matter, that the most profit derived from feeding different kinds of food to stock, is to be obtained by a judicious mixture of the articles, used in the way best calculated to promote the health and thrift of the stock fed.

It must be apparent to every one, that in this, as well as all other branches of the farmer's business, there are many local causes which will affect him one way or the other, and circumstances which he is unable to control, will often operate to counteract and prevent the successful accomplishment of his efforts.

In the preceding table, reference was made to such articles as are used as food for stock; in the following one those articles are considered which are used as food by the people of this country to a considerable extent, and it purports to give nearly the amount of nutritive matter contained in them respectively; 100 lbs. of each article are taken, and after the water contained in them is separated, the number of pounds of nutriment is given: Wheat flour, 90; corn meal, 91; barley meal, 88; rye flour, 79; oat meal, 75; rice, 86; white beans, 95; potatoes, 22; carrots, 10; turnips, 5; beets, 15; cabbages, 8; apples, 16; pears, 16; plums, 29; peaches, 20; grapes, 27; strawberries, 10; melons and cucumbers, about 3. Butchers' meats, (fresh,) taking one kind with another, average about 35 per cent. of real nutritive matter; the loss consists chiefly of their juices and other soluble matter. In cooking meats there is more loss by roasting than by boiling, and a little more loss on salt meat than on fresh; there is not quite so much loss on poultry, as there is on butchers' meats.

Pure milk, as it comes from the cow, contains over 90 per cent. of water; how much it contains as it comes from the *milkman* is problematical, and those who *manufacture* the article can best determine that fact. The flour of spring wheat is said to be more nutritious than that of winter wheat, from the fact of its containing more gluten than winter wheat. It is said that grains grown in cool climates, yield more flour per bushel than those growing in warm countries, and the heavier the grain, the greater the yield of flour.

From the last table given, a person by knowing the prices at which the articles can be obtained, may easily determine what articles of food are the most economical for them to use, which as a matter of course will depend much on the condition in which they are situated; but with a majority of people it will continue to be as it has been—they will consult their *appetites* rather than their *pockets* in the selection of food, without much regard to cost, or in many instances, health either—for appetite is a hard master, imperious in his demands, and comparatively few have the moral courage to deny its gratification, unless compelled by stern poverty, or some other equally insurmountable obstacles. C. T. ALVORD. *Wilmington, Vt., May*, 1857.

ANOTHER ACQUISITION BY MR. THORNE.—We take pleasure in correcting an error in our notice last week of Mr. AMBLER'S sale. The bull "Grand Turk" was there purchased by HENRY STRAFFORD, Esq., for EDWIN THORNE of New-York, who has presented him to his brother SAMUEL THORNE of Dutchess Co. Mr. T. is therefore now the owner of this bull, and not the "Illinois Co" as was stated. We understand the animal is expected to arrive shortly.

BONES AS A MANURE.—Bones are pretty generally known and acknowledged as a powerful fertilizer; but before they become so the phosphates in them must pass from an insoluble to a soluble state. This change is effected naturally in the course of a few years, by agents existing in the soil. The chief of these are probably carbonic acid and other acids, as the humic, almic, &c., which result from the decomposition of vegetable and animal matter.

Inquiries and Answers.

WORKS ON HORTICULTURE.—What is the very best work on Horticulture, where can it be had, and what price prepaid postage, and how should the money be sent so that it may go safe? ISAAC B. RUMFORD. *Oakland, Cal.* [There is no general American work, embracing all branches of the subject. For the pruning and garden management of fruit trees, Barry's Fruit Garden is an admirable work; for raising kitchen garden vegetables, much useful information may be found in Buist's Kitchen Gardener. These are sent by mail by Saxton & Co. of New-York, for $1.25 for the former, and 75 cts. for the latter. Johnson's Dictionary of Gardening, partly adapted to American use, contains many hints in relation to the cultivation of ornamentals, &c., and is sold for about $2. Loudon's Encyclopedia of Gardening is the most complete and comprehensive work on all departments, and costs some ten or twelve dollars; but being entirely English, requires some judgment and experience to adapt it to American practice.

MORE ABOUT RATS.—There is a prescription I have seen tried, and which I have never seen in print. Catch a quantity of rats, say from eight to a dozen, put them in a large kettle, out of which they cannot escape, and keep them there without food. They will presently devour each other, and till there is but one left. That one, of course, is the strongest. Let him out, and go about; he will catch and eat every rat on the place. The best way, however, to destroy rats, is to ferret them out. Ferrets are tame animals, and can be bought in New-York. W. KLASSMANN.

BEDS OF BIRCH SPLINTERS OR SHAVINGS.—Perhaps your subscribers may not generally be aware that they can make good beds out of yellow birch saplings. We have made several during the winter for family use, and find that they answer an excellent purpose. Select those which are free from knots, saw into suitable lengths, and peel as for brooms: the finer the splints the better. It may seem like a tedious process, but a family will make one in two or three evenings. A FRANKLIN SUBSCRIBER.

PATENT OFFICE SEEDS—I wish to inquire through the Cultivator, whether the Patent Office is bound only to distribute seeds to nurserymen who will cultivate them in a high state, then blow them up and herald their new acquisitions in all the journals, offering to sell at a price they think will bring them a fortune. Then when farmers get them at the seedman's prices, after being forced in hot-beds or in a high state of cultivation, and cultivate them in the ordinary way, they fail entirely. If seeds were sent to farmers they would try them, and if they proved valuable they would be where they would be made useful without this speculation. Farmers are becoming so prejudiced with such impositions, that they will not lay hold of those things that are good. I have frequently written to the Patent Office within the last ten years, but have never received any seeds. J H.

[There are many who much doubt the propriety and wisdom of the course pursued by the Patent Office, in the purchase and dissemination of seeds; but aside from this fundamental question, so far we have heard, the general aim of the Commissioner has been a good one—to put the seeds where they will be most likely to obtain a careful trial, and where they would in the end probably reach the greatest number of hands. Individuals may have been occasionally slighted, as is not unlikely, either from an ignorance of their capability in the respects named, or from inadvertance. Our correspondent had perhaps better apply through his member of Congress.

ANNUAL FALL OF RAIN.—Is it a fact that as much rain falls in this country as in England, and if so, whence arises the popular opinion to the contrary? X. Y. [Statistics prove that the amount of water which falls as rain, snow, or hail, in some parts of this country very considerably exceeds the average in the British Kingdom, while nowhere does it appear materially less. Observations at fifty different points in this state during a period of ten years, show a mean annual fall of 35.1 inches. Dr. Dalton gives 34 inches as the mean estimate for England and Wales, and Dr. Kane the same for Ireland. But the popular opinion of the superior dryness of our climate is not thereby proved incorrect. We often receive in a few hours as heavy an outpouring from the clouds as in Great Britain would take a fortnight in the coming. Hence it runs off more rapidly, the sun is out a much greater portion of the time, and exercises a proportionately greater drying influence.]

EGG HATCHER.—*Poulterer.* The best we can recommend is the old hen herself. Numerous contrivances have been brought out, and many of them have in turn brought out chickens, but in the present state of our agriculture, we fancy the natural system is in no danger of being generally supplanted by Eccalobions or Incubators of any kind. We have seen it stated that there is an oriental practice of devolving upon children or aged persons, the monotonous duty of hatching eggs, and that they have accomplished it very satisfactorily, and even come to like the task.

SPRING WHEAT.—*R. R.* The most prominent varieties are the Italian, the Tea Wheat (or Siberian Bald,) and the Black Sea. Spring wheat has an advantage over that sown in autumn, in escaping the dangers of the winter, and being much less liable to the attacks of some insect depredators, among which the Hessian fly has been the most annoying; but on the other hand it frequently suffers severely from rust, and although containing much gluten and making excellent bread, is of too yellowish a tint for the manufacture of the best and handsomest flour.

THE SUGAR MAPLE.—*C. T., Monroe.* There are twelve or more species of the maple indigenous to the North American continent. Of these, however, only the *Acer saccharinum*, the common Sugar maple, and the *A. nigrum* or "black Sugar maple," yield a sap sufficiently saccharine for sugar-making purposes. The trees continue to be tapped for a long period without apparently suffering from the process.

BEANS.—*A Subscriber.* These are extensively grown in Great Britain as a field crop; bean-meal, as well as the excellent fodder furnished by the straw, being there considered of great value for live stock. While we have Indian Corn at command, beans will probably never become a popular field crop with us; although there are considerations on which their culture has been strongly recommended.

COCHIN CHINAS TOO FAT.—"Is it a usual thing for Cochin China hens to die of fat? I had one set, and on Monday last she was dead: on opening her, there was oats in the craw, which was lined with fat; a friend lost one the other day in the same way." [The Irish Farmers Gazette states that according to the experience of its editor, Cochin Chinas are difficult to fatten when young, but when full grown frequently die of fat. We are not aware of similar instances in this part of the world.

RING BONE.—I have a handsome yearling colt which has got an enlargement near the pastern, on one of his hind legs. I suppose it is what is generally called a ring-bone. If you or any of your correspondents can inform me how I can effect a permanent cure, by doing so through the columns of the Co. Gent. you will confer a favor on A SUBSCRIBER.

MADDER.—In Co. Gent. of the 21st inst. a young farmer, "J. B." inquires respecting the culture of Madder, &c. He may find a lengthy article (20 pages)

on the culture of Madder, in the Patent Office Report for 1848, by Count Gasparin, commencing at page 583. Also, in Patent Office Report, 1855, there are something like a dozen pages on madder, by D. J. Browne.

L B.

WELLS AND PUMPS.—MR. EDITOR—I am desirous of knowing the best kind of well, and best style of pump to put in it. Some of my neighbors say the old fashioned stone well, with the old wooden pump, is the best. A new fashioned well is spoken of, a well-hole is sunk, and a box two feet square (without a bottom) is placed at the bottom of the well, connecting with the surface by a pipe for the pump, and then the earth is filled in again. A SUBSCRIBER. [The new iron pumps are incomparably better than the wooden ones. We have no knowledge of the new kind of well, but can perceive several strong objections to it, and but little to commend it.

MATTHEWS ON THE CURCULIO.—Among your prescriptions for the Curculio nothing is said of Matthews' remedy. What has become of it? S. M. *Kensington, Ct.* [Our correspondent will find all the information that has or can be at present made public, in relation to Matthews' Curculio remedy, and how far it has proved a failure, on p. 142 of the 8th volume of the Country Gentleman. We cannot conceive what object is to be attained now, by continuing to require secrecy, the committee having charge of the experiments having laboriously and faithfully given it a full trial, and truthfully, and with justice to the remedy and to the expecting public, stated its value.

CHURNING BY WATER POWER.—What kind of churn is best adapted to water power? Will Kendall's answer the purpose, or is the common cylinder preferable? We have used Kendall's by hand for several years, and now propose bringing water to our aid. S. M. J. *Amsterdam.* [We have never churned by water power, but do not see why any rotary churn which operates well by hand, will not succeed as well when driven by water. Kendall's is a good, small, and cheap churn—the thermometer churn is better for a larger dairy.

LATE-GROWN FODDER.—Which would be the most profitable crop for fodder after some early potatoes that will probably come off about the 10th July—turnips, corn fodder, millet, or 'sugar cane,' on strong warm soil in high tilth? WM. J. PETTEE. *Lakeville, Conn.* [Corn-fodder, sown in drills, *cultivated* two or three times, with seed from some rather early variety, and three bushels per acre, will be best. Sugar cane is not sufficiently tried. Unless there should be a very early autumnal frost, it would mature amply.

WOLF TEETH ON HORSES—*D. H. S., Freeport, Ill*—The remedy referred to on page 348 Co. GENT., is the same that has already appeared in our columns several times, viz., the extraction of the "blind tooth," or teeth, the existence of which is supposed in some way to affect the sight of the animal, and finally destroy it.

AMMONIACAL LIQUOR OF GAS WORKS—I have used it for scratches on the heels of a horse when other remedies all failed, with entire success. I have also used it on my corn; first soaking the corn, and then putting about two tablespoonfulls of the liquor on, and finally rolling it in plaster, and not a hill of it was pulled by the birds. A SUBSCRIBER. *Orange Co.*

QUERY.—Will you answer through the Cultivator the following questions:—How will sawdust answer as bedding for cattle? Is chestnut sawdust on account of its acid properties better than hemlock? [A communication on this subject will be published next week. We shall be pleased to receive the experience of other correspondents.]

CHESTER COUNTY HOGS.—I want some information about the Chester White, or Chester county hogs; in what do they differ from the Suffolk? Are they larger, and which breed is considered the most profitable? GEO. FOLSOM. *Zanesfield, O.* [Will some correspondent please furnish the desired information?

WATER APPLE.—I have received quite a number of letters for the Water Apple grafts. The letters have all been missent and forwarded, and I suppose some will never come to hand. My Post-Office address is Pleasant Valley, Bucks Co., Pa. CHARLES B. OTT.

FISTULA.—Will you or some of your numerous correspondents please inform me of a certain cure for the *Fistula.* I have a fine brood mare badly affected on both shoulders, and am at a loss to know what to do for her. C. C. MOORE. *Larissa, Texas.*

TICKS.—Can you inform me through the Cultivator how to prevent ticks from getting on horses and cattle, and injuring them? S S. C. *Bowling Green, Ky.*

EXTENSIVE SHIPMENT OF VALUABLE ANIMALS.—We learn from a friend in Liverpool, that the ship Georgia, which sailed from that port May 20 for Philadelphia, contained "32 head of Short-Horned cattle, 11 of which were bulls of varying ages and rare beauty of symmetry; 3 very valuable horses; 25 sheep, and 25 pigs." These animals were purchased at an expense, it is said, transportation included, in the neighborhood of $40,000. They are all for the Illinois Cattle Importing Association, and have been selected by its agents, Captain BROWN, Dr. JOHNS, and Mr. JACOBY, from the best sources. The horses are "Young Barnton," a thoroughbred, and "Baylock," a Cleveland bay stallion, and the thoroughbred filly "Catchfly." "Barnton," the sire of the first of these, is mentioned as having been "engaged to serve the royal stud at Windsor, at the large sum of £250 for the present season, and £400 for next season"—an evidence, at least, of the esteem in which his offspring are there held. The bulls, cows, and heifers were many of them selected at the late Dublin show of the Royal Agricultural Society of Ireland, including prize-takers in nearly every class exhibited—as were also some fine pigs. Other purchases were made, of Southdown sheep from the famous flocks of Mr. Jonas Webb; Cotswolds from those of Mr. Lane, Mr. Williams, and Mr Hawer; and cattle and pigs from the stocks of the Rev. Mr Cator, Skelbrook; and of Messrs. Combes, Cobden, and Cruickshank, Aberdeen; R. C. Lowndes, Club-moor, and H. Ambler, Halifax. In addition to the above animals, there were at the same time shipped three beautiful little Shetland ponies to R. A. Alexander, Esq., of Kentucky. The whole "between-decks" of the vessel was fitted up in the best style for the security and comfort of the animals, at a cost for freight alone of $4,000.

These animals can but do much for the stock of Illinois, and we congratulate the enterprising farmers of that State on the spirit they have shown, as well as the judgment, if we may believe our reports, manifested by their agents, whose liberality and skill appear to have left a favorable impression behind them. They acknowledge the reception of many kind attentions from all with whom they have had to deal, and of valuable advice and assistance from many, including especially Mr. Strafford of the Herd Book.

PROLIFIC COW.—*Twenty Calves in six Years.*—On the 26th of last month, Mr. Thomas Morrison, of Lachute, was favored with three calves from one cow, all of which are well and healthy. I saw the three sucking at one time. The cow is now eight years old; when two years old, she had three calves; since then she has had, at two different times, four calves; twice she had three, once two, and once only one; making in all twenty calves in six years. If any of you Montrealers have the spirit of a Barnum, you ought to come up and buy her.—*Montreal Gazette.*

Animals sometimes get too much Salt.

Necessary as salt is to the healthy condition of most animals on a farm, and though there are probably more who give too little than there are who give too much of this article to their stock, yet there are times, and seasons, and conditions of an animal when salt is administered in too large quantities. A brief indication of some of the occasions when animals get more salt than is good for them may be of service to some, who may never have had their attention directed to the mode in which this substance operates.

1. Animals sometimes get too much salt in consequence of having been long deprived of it, and then having access to it in too large quantities. Disease, and even death has resulted from this cause. Cases of this kind have been put upon record, and may have come in this way or otherwise to the knowledge of the reader. The mode of preventing such mishaps consists in keeping salt, with the addition of leached ashes, a little sulphur, perhaps, within reach of stock at all times, or in feeding it more frequently, or in giving it in small quantities after long abstinence.

2. Another occasion when salt is given in too large or improper doses is when animals are first turned out to grass. As scouring is a natural and common consequence of making this change it only aggravates the matter to give them salt in liberal doses. Dry hay, or bran or meal in a dry state, with *a very small dose of salt*, would be a better corrective; while making such a change slowly and gradually, not suddenly, would be the proper preventive

3. Some give salt to their milch cows when feeding them on turnips, in order to correct the peculiar taste which they are apt to communicate to the milk and butter. Now, if the turnips are given in such quantities as to produce more or less scouring, the administration of salt will only aggravate the evil, and diminish the secretion of milk. Indeed, according to the authority of STEPHENS, in his *Farmer's Guide*, it is the large amount of common salt in turnips, as also in mangel wurtzels, which causes cows fed exclusively upon them to fall off in milk.

4. It is the opinion of some at least, that stock put up to fatten will lay on fat much faster without salt than with it. This fact, if fact it be, is attempted to be accounted for by theorizing in this way. Salt increases the secretion of the bile, and, as bile is composed of fat, oil, gum, and other carbonaceous matters, all of these which are carried off in an excess of bile are just so much taken from the materials from which the fatty parts of the animals are built up. In a word, it is supposed that *the more bile* an animal secretes and passes out of his system, *the less fat* it will produce. When the secretion of bile is so great as to produce scouring, fat will not be produced of course; but if salt comes short of this result, are there facts sufficient to support the above theory?

Turnip Feeding and Butter Making.

MESSRS. TUCKER & SON.—I see by your last Country Gent., that you received the package of butter, and that it passed the ordeal.

My manner of feeding turnips is this:—When taking them out of the ground I dress them close, cutting off all roots and fibres. It is the tap root and its appendages that impregnate the milk and butter in a great measure. You or any one may tell this by chewing them, and they will leave a pungent taste in the mouth The next operation is—I cut them as long as twenty-four hours before feeding, and throw a handful of salt over them when cut, so that what smell remains passes off in the atmosphere: and last, I never or very seldom feed until after milking.

This is my manner of feeding, and if any of your readers have a better one, I should like to hear from them through the columns of the Co. Gent. or Cultivator.

As you desire to know how my wife makes such butter in winter, I will say that she took no extra pains with that sample.

Her manner is to keep all the vessels clean and sweet, and not to let the cream stand so as to shear it before churning She churns all the milk, and after getting it to a right temperature in one of Chapman's patent churns, she keeps the crank in motion from 15 to 20 minutes, when her butter is ready for taking out. She then washes it in three waters, either hard or soft; works the buttermilk out, and the work is done. J. WALLACE. *Cayuga Co.*

More about Candle-Making.

MESSRS EDITORS—I have noticed several communications in the Country Gentleman, recommending the use of alum in the manufacture of candles, to harden the tallow. But after some experience and a number of experiments, I feel confident that there is little more than imagination in its hardening effect. In the first place, alum will not mix or form a combination with tallow or any other grease, and remain so only while the tallow is at a certain degree of heat, and that degree is above a melting heat. The alum cools and precipitates at a temperature that will keep tallow in a fluid state, so the alum will be found granulated and settled at the bottom, pure and unmixed, and as much of it as before its incorporation with it, while the tallow when cool bears no trace of its astringent presence, while it throws off nothing more from the tallow than the natural scum and froth that always rises when subjected to a boiling heat. If it had the effect to separate the oil from the harder parts, it might be of some use, but it does no such thing. Or if you dissolve the alum in water for dipping candles, as is the practice of some, and will take the trouble to evaporate the water after the candles are dipped, you will find all your alum remaining ready for another hardening process.

But suppose, if such a thing could be, that alum and tallow should combine, and though that should only be in a very small degree, and it has all the hardening effect that is claimed for it, and they could be moulded or dipped in that situation, the candles then would be worthless, for alum is not combustible; therefore the candles when lighted would burn only the tallow, and the incombustible alum would be drawn by capillary attraction to the wick, and would form an incrustation upon it, and in a short time the candle would begin to burn dim and more dimly, till it would finally become extinguished by its own incrustation. The absence of this coating on the wick, where alum has been used in the manufacturing, is prima facie evidence that it has formed no combination whatever with the tallow.

In the recipe of Mr. Hard, he says, "for 30 pounds of tallow, take half a pound of alum dissolved in water, pour it into the tallow, let it come to a boil, skim and add two pounds of beeswax." To this he says, "you can add one quarter lard to usually hard tallow" This is a very good way of hardening and increasing the quantity of material used for candles. I have frequently used the same and similar combinations So beeswax and lard, in the proportion of two pounds of wax to six of lard, make a very good article; but it is the wax that hardens, and not the alum, which adds nothing, and is superfluous and unnecessary WM. B. HANFORD. *Walton, N. Y.*

☞ Mr. JOHN D. PATTERSON, of Chautauque Co., has recently sold two French Merino Rams and two Ewes of the same breed to Mr. SAMUEL BRAMAN of California—price said to be $1,400. Also a Ram to Mr. J. W. Watts of Georgia, for $300.

The Woodburn Sale.

We have received the following detailed report of the Third Annual Sale of Short-Horned Cattle, the property of R. AITCHESON ALEXANDER, Esq., of Woodburn Farm, near Midway, Woodford Co., Ky., June 3d, 1857.

BULLS LET.

1.	Morris Thomas, Shelby Co., Ky., Lord John,	$515
2.	J. R. Bryant, Pleasant Hill, Ky., Baron Martin,	315
		$830

BULLS SOLD.

2.	H. Renick, Circleville, Ohio, Roland,	$510
3.	A. Lawell, Missouri, Chester,	400
4.	A. R. Humphries, Union, Va., Oliver,	725
5.	Benj. Montgomery, Washington Co., Ky., Jason,	200
6.	John James, Lexington, Ky., Benton,	200
7.	J. R. Bryant, Pleasant Hill, Ky., Lawrence,	685
8.	John R. Viley, Lexington, Ky., The Priest,	690
9.	Geo. Smith and E. & W. Jesse, Clay Village, Ky., Julian,	300
10.	Chas. Buford, Rock Island, Ill., Wilton,	240
11.	H. B. Williams, Memphis, Tenn., Norman,	700
12	R. M. Johnson, Scott Co., Ky., Manley,	235
13.	W. L. Waddy, Clay Village, Ky., Anson,	320
14.	A. B. Brown, Lexington, Ky., Baronet,	200
15.	W. R. Duncan Winchester, Ky., Princeton,	510
16.	J. A. Beaseley, Lancaster, Ky., Breckon,	150
17.	Stephen H. Miles, Shelbyville, Ky., Milton,	505
18.	M. R. Cockerill, Nashville, Tenn., Darley,	630
19.	Joseph Chinault, White Hall, Ky., Chorister,	175
20.	Joseph Scott, North Middletown, Ky., Orlando,	290
21.	John Garrett, Versailles, Ky., Jasper,	325
22.	Isaac Shelby, Lexington, Ky., Wilson,	315
23.	Dr. E. Warfield, Lexington, Ky., Croton,	210
24.	P. S. Dudley, Flemingsburg, Ky., Warlock,	155
25.	George Haydon, Muhlenburg, Ky., Apathy,	175
26.	A. B. Barrett, Henderson Co., Ky., Fisherman,	130
27.	C. G. McHadden, St. Louis, Mo., Logic,	200
28.	T. H. Jackson, Henry Co., Ky., The Doctor,	160
29.	Wm. Chinault, Madison Co., Ky. Wayward,	235
30	Jos. Miller, Sumner Co., Ky., Doubloon,	105
31.	Jos. Miller, " " Figaro,	105
		$9,780

COWS AND HEIFERS SOLD.

1.	Warren Viley, Woodford Co., Ky., Woodburn Beauty,	$230
2.	John Cunningham, Paris, Ky., Fly,	195
3.	H. B. Franklin, Fayette Co., Ky., Miss Waller,	105
4.	H. B. Franklin, " " Julia,	95
5.	Henry Porter, Clarksville, Mo., Nell,	180
6.	Henry Hibler, Paris, Ky., Mary Ann 9th,	145
7.	Geo. Smith, Shelby Co., Ky., Lady Jane,	140
8.	P. H. Thompson, Fayette Co., Ky., Woodburn Beauty 2d,	350
9.	John Cunningham, Paris, Ky., Lady Jane 2d,	160
10.	Gen. S. DeSha, Harrison Co., Ky., Verity,	230
11.	P. H. Thompson, Fayette Co., Ky., Julia 2d.	180
12.	(Withdrawn, not having bred, Lady Jane 3d.)	
13.	Wilson Lee, Danville, Ky., Orba 3d,	145
14.	P. H. Thompson, Fayette Co., Ky., Nell 2d.	220
15.	J. M. Hackweth, Shelby Co., Ky., Cherry 2d,	175
16.	(Withdrawn, not having bred, Miss Waller 3d.)	
17.	D. W. Jones, Boyle Co., Ky., Novelty,	185
18.	W. A. Cook, Mercer Co., Ky., Miss Waller 4th,	200
19.	Nelson Lee, Danville, Ky., Rose 3d,	250
20.	Joseph Miller, New-Haven, Ky., Woodburn Beauty 3d,	165
21.	Joseph Scott, Bourbon Co., Ky., Ellen Catley,	205
22.	R. Heddleston, Flemingsburg, Ky., Maid Marion,	315
23.	H. Hibler, Paris, Ky., Maiden,	270
24.	Saml. Salyers, Fayette Co., Ky., Maid Marion 4th,	300
25.	R. Heddleston, Flemingsburg, Ky., Flora 4th,	300
26.	A. B. Barrett, Henderson, Ky., Miriam,	200
27.	John Cunningham, Paris, Ky., Nell 3d,	160
28.	Thomas Brown, Washington Co., Ky., Mora,	150
29.	Nelson Lee, Boyle Co., Ky., Tulip,	490
30.	F. J. Gray, Cynthia, Ky., Ellen,	150
31.	John Haskins, Garrard Co., Ky., Mabel,	100
32.	H. B. Franklin, Fayette Co., Ky., Lupin,	400
33.	(Withdrawn, being sick, Midge.)	
		$6,490

SHEEP SOLD.

1.	S. H. Jackson, Southdown buck,	$135
2.	J. B. Kennidy, Cotswold buck,	50
3.	F. J. Gray, do.	41
		$226
1.	James Foley, Cotswold ewe,	$21
2.	T. H. Jackson, do.	21
3.	F. J. Gray, do.	23
4.	do. do.	28
		$103

PIGS SOLD.

1.	A. B. Barrett, pair pigs,	$15
2.	Logan Railey, do.	20
3.	H. Rowland, do.	20
4.	A. B. Barrett, do.	15
		$70

RECAPITULATION.

30 bulls,	$9,780	Average pr. head,	$326	10
30 cows and heifers,	6,490	do. do.,	216	33
60 head of cattle,	$16,270	do. do.,	271	16½
3 bucks,	226	do. do.,	75	33
4 Cotswold ewes,	103	do. do.,	25	75
8 pigs,	70	do. do.,	8	75
Amount sales,	$16 669			
2 Bulls let for 1 year,	830	do. do.,	415	00

Amt. sales & lettings, $17,499

In addition to the bulls here let, Mr. Alexander, this Spring, let to Messrs. G. Bedford and Major Duncan, of Bourbon, the young bull, Duke of Airdrie, for $1,250. Respectfully yours, &c., S. W. JOHNSON, *Agent for R. Aitcheson Alexander.*

LIGHTNING RODS.—Wishing to erect a lightning rod as cheap as possible, and a protection to my buildings, and finding that the kind of rod used, and the manner of putting it up in this section is condemned by some as worthless, advice from you and any others who will give it in the Cultivator, will be thankfully received. What is the cheapest metal that may be used and be safe? how large should the rod be for forty feet in length, and how should it be fastened to the building? Will the short turns (which must necessarily be in it if it is erected upon the chimney and down the roof) affect its conducting power? A rod of a given height from the building will protect what area? An answer to the foregoing questions, and any other suggestions, will very much oblige one subscriber, and I doubt not, hundreds. WM. E. HUNTLEY. *Westford, Vt.* [A very full article on this subject will be found in the REGISTER OF RURAL AFFAIRS for 1855. We think no further information than there published will be desired by our correspondent.]

WORKS ON FRUIT CULTURE.—I would be pleased to know where there can be purchased a small Horticultural Dictionary containing a full description of the pear, apple, cherry, and other fruit trees, time of ripening, &c. I also would like to know which is the proper time to bud young apple trees, whilst they are yet in the bed or after they are set in the nursery. JOHN T. SERGEANT *Sergeantsville.* [For pruning and management of the Dwarf pear and other fruits, the best work is *Barry's Fruit Garden.* For a description of the varieties, the necessary information will be found in the American Fruit Culturist, last or eleventh edition. Apple trees are budded soon after midsummer, and after the young seedlings are removed from the seed bed to the nursery row, and have begun to grow vigorously.

☞ The N. E. Farmer describes a new plow brought out by an enterprising firm in Boston, with 12 different forms and sizes of mould board, all fitting a common standard or framework—thus adapting a single implement to all the purposes of the farm. It is called the "Universal Plow."

☞ In England the short supplies of guano are beginning to excite some anxiety; it appears that during the first quarter of 1855, 35,570 tons were imported; in 1856 the supply amounted to 62,265 tons; while this year the amount has dwindled down to 9,241 tons.

Notes for the Month.

THE SEASON AND THE CROPS.—*Rock Island, Ill., June* 2, 1857.—When I left Albany on the 21st of May, I anticipated finding warmer weather and a more forward spring as I proceeded westward. But such was not the case. At Cleveland I found the season even more backward than at Albany. At Chicago the vegetation was considered at least three weeks later than usual, and so it is wherever I have been. This extension of the winter, which was a very severe one, into the lap of spring, has proved as injurious in northern Illinois and the portion of Wisconsin through which I travelled, as in western New-York. Many cattle I am told, have died from actual starvation. Thirty dollars per ton is the lowest price I have heard for hay, and in some places it is $40 per ton, and difficult to be procured even at this price. This was a state of things I had not anticipated, in a land where all the hay wanted could be had for the cutting. The excuse for it is found, not in the want of forethought on the part of the farmers, but in the length and severity of the winter.

I have not as yet seen a field of winter wheat. It is said to have been winter-killed throughout northern Illinois, to such an extent that it has nearly all been plowed up, and the land re-seeded with spring wheat, which was got in in good season, and looks well; but I hear that much of the corn planted, has rotted in the ground. I saw a farmer yesterday who resides about twenty miles from this place, who informed me he had just commenced re-planting eighty acres of corn, the first planting having rotted in the ground. He attributes its failure to the cold wet weather, the seed having been carefully selected and preserved. Upon the whole, the prospect for any great reduction in the price of agricultural products, from an over-abundant harvest this season, seems by no means flattering. L. T.

THIRD VOL. OF THE AM. S. H. HERD BOOK.—We have received a copy of this portly volume from LEWIS F. ALLEN, Esq., its editor. It is now ready for delivery to subscribers, and will be sent to them in the order in which their remittances are received. The price is $5, and postage, when it goes by mail, 50 cts. additional. Those not subscribers can obtain the work at above rates by addressing Mr. A. at Black Rock. We have a few sets for sale at this office—prices as follows: 1st vol. $3, 2d vol. $5, 3d vol. $5, to which $1 25 must be added for postage on the three, when they go by mail—although it would be cheaper in most cases to receive them by Express. The preceding vols. may also be obtained as above, direct from Mr. Allen.

The present volume shows the progress of the Short-Horns in public estimation, and the increased attention now given to improved stock. Breeders and owners are represented in it from 27 of the States and the two Canadas. It carries the number of the bulls from 1170 to 2468, contains over 700 pages, and upwards of 100 portraits of living animals, aside from several other plates. Only a thousand copies are printed,—a small number in proportion to the breeders represented. All in any way concerned in this kind of stock would find it to their own interest to extend every encouragement to the Herd Book. No breeder should be without a complete set.

THE CATTLE MURRAIN IN EUROPE.—Prof. Simonds, who is travelling on the continent to investigate this subject, writes to the Secretary of the Royal Ag. Society from Cracow, that the severe measures which Prussia has adopted have kept back the malady, *rinderpest*, from entering her kingdom, except a short distance from her frontiers on Austria and Russia; and the places where it had broken out were then (Ap. 30) entirely free from the infection. Still the military cordon was not raised, although it probably would be in course of a few weeks. Prof. S. was going into Galacia, where he expected to meet with the disease. The governments of Holstein, Lubeck, and Mecklenburgh, as our readers are aware, some time ago adopted very stringent measures, not only requiring infected cattle to be killed on the first appearance of the pleuro-pneumonia, but also all healthy ones which had in any way come in contact with the malady. No great fears were entertained of its reaching England.

TRIAL OF REAPERS, MOWERS, &C., AT SYRACUSE.—We learn from Mr. WILDER that "a large number of machines have been entered for trial" at the U. S. Ag. Society's proposed meeting for this purpose, at Syracuse in July [precise date and board of Judges not yet announced]. We have received the circular, containing rules and regulations, &c., which may be obtained we presume by addressing the Secretary, B. P. Poore, Newburyport, Mass. The premium list includes three prizes (1, Gold Medal and Dip, 2, Silver Medal, 3, Bronze Medal) respectively, on Reapers, Mowers, and Reapers & Mowers combined; Silver and Bronze medals, for the 1st and 2d best transferable Automaton Rake; ditto on Hay Rakes; ditto on Teeding Machines; ditto on Hay Pitching Machines; Silver Medal for the best Clover and Grass Seed Harvester, the same for best Hay or Cotton Press; and bronze medals for small Tools, including Grain Cradles, Hand Rakes, Hay Forks, Scythes, Cradles and Snaths—in all ten classes—besides which some discretionary power of awards to meritorious articles is placed in the hands of the Judges.

At a meeting of the "Executive Committee of the U. S Ag. Society" in this city last week, the following Board of Judges was chosen for the trial at Syracuse:

J. STANTON GOULD, New-York, Chairman; Seth Scammon, Maine; Brooks Shattuck, N. Hampshire; Edwin Hammond, Vt.; Sanford Howard, Massachusetts; Stephen H. Smith, Rhode Island; T. S. Gold, Connecticut; B. B. Kirtland, New-York; Geo. Hartshorne, New Jersey; Jno. Jones, Delaware; Francis P. Blair, Indiana; Fred'k Watts and J. L. Darlington, Pa.; Gen. J. T. Worthington and Wm. A. Gill, Ohio; Joseph A. Moore and W. L. Underwood, Kentucky; Joseph A. Wright, Indiana; Horace Capron, Illinois; J. C. Holmes, Michigan; Wm. C. Rives, Virginia; H. K. Burgwyn, North Carolina; A. G. Summer, South Carolina; Richard Peters, Georgia; Lewis Worcester, Wisconsin; Wm. Duane, Iowa. Joseph E. Holmes, General Superintendent and member *ex officio*.

A resolution was adopted inviting the co-operation of the N. Y. State Ag. Society.

THE SHOW AT PENN YAN—CROPS, &C.—I am just returned from attending the show of the Wool Grower's Association at Penn Yan. There was a very fine display of fine wooled sheep, although comprising a much smaller number than last year; there were a few of the long wooled breed. Mr. Miller from Markham, Canada West, had 3 yearling bucks and 5 do. ewes that were very fine; otherwise the long wools were few in number and the quality nothing to boast of. This kind of sheep don't seem to take very well in Western N. Y.—and I don't know but the best Merinos answer better for this country; the long wools require a turnip growing country, which this never can be, for both summer and winter are against it. Cold turnips fed to either cattle or sheep here with the thermometer over or near zero would be a cold morsel, besides the expense of storing and risk of keeping would never pay. Could our corn that is consumed for drink and all the oil cake made in the country, be fed to our stock, then we might look for a much better state of farming. The wheat on all cold soils looks miserable in the extreme; if other States don't furnish great crops we will have to apply to Europe for wheat before harvest, 1858. JOHN JOHNSTON.

A NEW FEATURE.—It appears that at the late International show at Poissy, which we noticed some weeks ago, the examination of the animals was post-mortuary and internal, as well as of their exterior appearances in the flush of life. In other words the jurors, to quote a common expression, "sat upon" no

less than thirteen specimens of roast beef, rendering the following verdict, which is nearly in accordance with the previous opinions of connoisseurs:—First and Best, a *West Highland* ox; second, a *Devon*; third, a *Charolaise* (a French breed); fourth, a cross between the *Angus* and *Short-Horn*; fifth, an *Angus*; sixth, a *Limousin* (another French breed); seventh, a Short-Horn; eighth, a Parthenaise (French). The others were not classed. For *soup* and *boiled* beef, the Short-Horn ox, which only stood seventh in quality as roast beef, was placed first.

THE GREATEST YIELD OF SUGAR UPON RECORD.—MESSRS EDITORS—There is a maple tree standing near the west bank of the Connecticut, in the open field upon a slate stone soil, on the farm of Mr. Olney Bates, from which he has made this season 75 lbs. of sugar. It was tapped with twelve spouts, leading into six buckets, the greatest run being 10 pailfulls in 24 hours. The tree, though not tall, has a large, heavy, spreading top with numerous branches, and measures 14 feet in circumference near the ground. This tree has been tapped for many years past; last year 47½ lbs. were made from it. There is probably not another tree on this continent from which so much sweet has been extracted. I notice in the Tribune of May 30th, that this tree is located in Springfield, Mass. This is a mistake; it is Springfield, Vermont. J. W. C.

A TREATISE ON THE ARTIFICIAL PROPAGATION OF certain kinds of Fish, with the Description and Habits of such Kinds as are the most Suitable for Pisciculture, By THEODATUS GARLICK, M. D. Cleveland: Tho. Brown.

The volume before us includes a paper read at a meeting of the Cleveland Academy of Natural Science, of which the author is Vice-President, containing his first experiments, and the further articles from his pen that have from time to time appeared in the *Ohio Farmer*, with translations of the Reports made by Messrs Milne-Edwards and Costa, to the French government. Dr. Garlick has been carrying on experiments for several years, and he represents their results as satisfactory in the highest degree. The subject is one in which a great interest is now taken, and all who wish to make a practical trial should avail themselves of the experience here put within their reach. Address Thomas Brown, Cleveland, O. We shall endeavor to recur again to this work at an early opportunity.

ANOTHER "LARGE COLT."—I saw in your valuable paper of May 7th an article headed "More Large Colts,"—which induces me to make a statement of a colt I have, foaled May 3d, 1856. He is therefore near one year and almost one month old, and stands fifteen hands and one inch high, and girths sixty-six and one-half inches. This colt was weaned at three months old and has had nothing but hay and grass since, and would, if in condition, weigh at least nine hundred pounds. He is thinnish in flesh on account of having the distemper. He is a mahogany bay, black mane, tail, and legs, and was sired by the thorough-bred English horse, "Alexander," now owned by More & Judson, Delaware Co., Ohio, formerly owned by E. H. Ireland, Esq., of your place.

I should be very happy to meet these gentlemen with their colts and compare their merits, was I within three hundred miles of Albany or New-York Cities. WM. DILDINE. *Delaware Co, O.*

ANOTHER USE FOR THE SUNFLOWER.—A correspondent, who noticed a recent paragraph in our columns, in which it was stated that *corn* had been used for fuel the past winter in Illinois, for lack of anything better or cheaper, writes us to suggest the availability of the sun-flower for a similar purpose. He has resided for six years in the State mentioned, and has "seen the *Sun-flower* grow there with a stalk as large as a man's wrist." He states that it "makes a *good, light* fuel, while one bushel of seed will give about three quarts of oil, which repays the cultivation. The oil cake is remarkable for its fattening qualities, and will sell where it has been tried as well as any oil cake whatever."

REMEDY FOR THE "STRIPED BUG."—William Saunders, a skillful gardener, states in the *Horticulturist*, that the striped bug may be successfully repelled, by simply placing a *pane of glass* over each hill, supported at the corners on four small wooden pegs. He does not say how near the surface the glass should rest, but we suppose within an inch or two. He states that this has been found as effectual as the wooden box, while it freely admits air as well as light. It is of very easy trial.

☞ At the conclusion of their recent exhibition, the "Wool-Growers' Association of Western New-York" elected the following officers for the ensuing year:—

PRESIDENT—Hon. A. B. DICKINSON, Steuben county.

VICE PRESIDENTS—Silas Hillman, of Livingston Co.; W. Stewart Judd, Yates; H. A. Pendergast, Chautauque; A. Y. Baker, Steuben; Elisha M. Bradley, Ontario; Chas. H. Walker, Wyoming; D. D. T. Moore, Monroe; Charles Morrell, Tompkins; William Wilson, Allegany; E. E. Brown, Cayuga; L. F. Allen, Erie; Chester Hammun, Genesee; Hiram McCollum, Niagara; Walter A. Newhead, Wayne; Reed Burritt, Schuyler; John Johnston, Seneca.

CORRESPONDING SECRETARIES—C. D. Champlin, Steuben; Wm. D. Dickinson, E. F. Leach, Thos. R. Peck, Ontario; Wm. D. Purring, Wayne; G. Granger, Ontario.

RECORDING SECRETARY—H. T. Brooks, Pearl Creek, Wyoming Co.

TREASURER—William T. Remer, Yates Co.

☞ We learn that Mr. THORNE has recently sold to Mr. DAVID LEAVITT, Jr., Great Barrington, Mass., the bull calf "Azim," sired by "Neptune," and from "Lalla Rookh;" the heifer calves, "Louise," by "Duke of Gloster," and from imported cow "Apricot," and "Bena," sired in England by "Duke of Cambridge"—dam, "Blouzelind;" the yearling heifer "Azalia," by "Young Balco"—dam, imported "Agnes," and the imported cow "Darling," by "Grand Duke," and heavy in calf by "2nd Grand Duke." "Azalia" was one of the herd that won the 1st prize, as the best herd of any breed, at the U. S. Show last fall, and was also the winner of the first prize as the best heifer calf at the American Institute last fall. They were all first class animals, and will undoubtedly do much to improve the stock of Massachusetts. He also purchased a ram and three ewes (South-Downs)

☞ We see it stated that a new agricultural association, of which Silas M. Burroughs is President, Charles Morrell, Secretary and General Superintendent, and John Arnot, Jr., Treasurer, has been formed in this State under the title of the "Young Men's National Agricultural and Mechanics' Society." It is to hold its first Annual Fair at Elmira, commencing on September 1, and is said to offer premiums to the amount of $13,000. Its main object seems to be the encouragement of fire engines and fast horses, as $3,000 of the above amount are offered on the former, while the show of the latter is promised to include "Flora Temple, Lancet, Brown Dick, Rossiter, the Tid Hinman mare, and others."

☞ H. C S., Madison, Ind, sends us an article on the "Hog Cholera," which appeared in the Paris (Ky.) *Citizen*, from the pen of Dr. Dougherty. On careful examination of subjects of this disease, Dr. D. had found "that portion of the small bowel next the stomach, *literally filled* with worms to the extent of several feet, and in a high state of inflammation." He consequently considers this malady an inflammation resulting from the presence of the worm, and thinks it incommunicable from one animal to another. The treatment he would recommend is entirely of a preventive kind, as he does not believe the worms can be dislodged after once obtaining a hold.

FINE STRAWBERRIES.—The best specimens of fruit, the largest, and most highly colored and flavored, are always from those beds where the plants are kept thinned out to rows or "hills." If runners cover the whole surface, the fruit is smaller, more shaded, and the flavor is not in the highest degree of perfection. But the cultivated bed has one drawback,—the rain dashes the soil upon the fruit. This evil may be easily remedied by placing the short grass, which at this time is obtained by mowing lawns, between the rows. Tan has been recommended, and it does tolerably well, but is itself not so clean as is desirable. Straw, chopped short, is used by some, and is cleaner and better than tan. But the soft, clean, fresh grass, only an inch or two in length, obtained from lawns, is much preferred to either, and it is easily and frequently renewed. The moisture which it assists in retaining in the soil, promotes the larger growth of the fruit. If irrigation is applied, this covering retains the moisture in the surface soil, and prevents evaporation and crusting. We have known the fruit while ripening, to be be doubled in size in 24 hours, by a plentiful supply of water, dropping on the plants, and the mulching given them is next best to constant watering.

☞ H. A. TERRY of Council Bluffs, sends us a paper of water-melon seeds, of a kind which he originated and calls the "White Spanish." He says: "It grows rather large; oval; color white or yellowish white; flesh bright scarlet, and is one of the richest flavored melons that I am acquainted with." Also two papers of the "Fig Tomato" seed, of which he adds: "This variety is not the same as the Grape Tomato, or the Strawberry Tomato, as some of your correspondents think. The fruit is much larger than either of the others, and is dark purple when ripe. It is encased in a husk the same as the Strawberry Tomato, but often grows so large as to burst the husk entirely off. It has more the flavor of apples than of any other fruit when cooked. It is very productive and is really valuable in the west, where fruit is as yet scarce. It will succeed on any good soil, and should be cultivated the same as the common tomato.

☞ Tuesday, May 19, a sale of Short-Horns belonging to Mr. E. Bate, of Kelsterten, North Wales, took place under direction of Mr. Strafford. We have received no account containing names of purchasers, but it is said that "the attendance was very numerous, including short-horn breeders from all parts of the United Kingdom, as well as Australia and the United States. Twenty-one Cows sold for £837 18*s*, average £39 18*s*.; 15 Heifers and Yearlings for £684 12*s*, average £45 13*s*.; and 15 Bulls and Yearlings for £681 12*s*., averaging £45 13*s*, or the total, 51 head, reached an average of about $216 each.

A QUEER 'TRIAL OF SPEED.'—A bet was recently made in France between two farmers about the speed of horses and oxen, with the same load and same distance; the distance travelled was 23 kilometers (about 12 miles,) a four-horse team was put into a wagon loaded with 10,000 lbs. of beet-root pulp. The oxen were two yoke with the same load. The horses beat them only seven minutes, and would themselves have been beaten had they not been the best in the country. Time; 3h. 6m.; 3h. 13m.

TOBACCO.—On account of the improving of the prices the people here begin to take a more conspicuous interest in the culture of tobacco. Therefore I ask leave to defer to your consideration how far it may be convenient to publish occasionally any desirable information on the cultivation of that crop; especially referring to the management of the soil and of the plants; also of the best way eastern farmers can find to meet with a ready market and dispose of their crop. C. S. *Hartford, Conn.*

SWEET POTATO PLANTS.—We have received from C. B. MURRAY, of *Twenty Mile Stand, Ohio*, a box containing 300 of these plants of the "best northern variety"—proving, 1, that it is not yet to late for others to procure them, and, 2., that they will be forwarded in good shape to any order. We are much obliged to Mr. M. for the opportunity of trying his vines.

THE TRANSACTIONS OF THE CONN. STATE AG. SOCIETY for 1856 have been sent us, in a neat and substantial volume, by the Secretary, HENRY A. DYER. It contains the usual Reports of Officers and Meetings, and of the different committees at the last Fair; the Addresses by Judge Butler and Prof. Johnson; notices of, and several addresses delivered before County Societies, and in conclusion, a number of interesting papers by Messrs. Gold, Camp, Kellogg, Comstock and Dyer.

A TRIAL SUGGESTED.—I notice in the Co. Gent. of this week, Mr. Jas. McMillan says he has seen no data from which Prof. Voeckler, and I, form our opinion that manure loses nothing by being spread on the surface for six months before being plowed under. I form my opinion from an experience of so applying it for nearly if not quite twenty years; and I have no doubt if Mr. McMillan would give it a trial, he would find I am right. JOHN JOHNSTON.

"CHESS IN WHEAT."—*Enquirer.*—This subject has been so frequently and thoroughly canvassed in our columns, that we do not feel like joining in your invitation for a general discussion of it. You say that the communication published from the Sandwich Islands, apparently "leans to the idea that chess is not indigenous to any wheat field—that is to say, that wheat will not turn to chess." . . . We think it *does*, most decidedly, and, moreover, that it furnishes ample corroboration of this most unquestionable of all *facts*—which, to use your own words, "are stubborn things." When a question is brought forward, on one side of which are arrayed all those "facts," which give us evidences of *species*, either in animals or plants—the eternal verity that "every seed bringeth forth after its kind,"—and on the other side some stray stories of strange transmutations in a particular grain, we should neglect all laws of evidence and all common sense, if in attempting to decide, we failed to scrutinize most deeply even the fairest tales conflicting with rules otherwise inviolable. And, as regards wheat and chess, if, after such a scrutiny, no case can be *substantiated* in which the process of transmutation has been seen, either going on or completed,—and premiums have been offered for specimens of the kind, one of $50 or $100 being now open, we believe, to competition—our doubt as to the *occurrence* of the process becomes a certainty of its *impossibility*. Then, in conclusion, we have the testimony of such additional "facts" as these: That farmers who have year after year planted nothing but *clean* seed, have at length entirely eradicated chess from their wheat fields, and that the evidence of our Sandwich Island correspondent proves the wheat never did "turn to chess" there, until the seeds of the weed were introduced from abroad. . . . We refer you to our back volumes for a fuller explanation than we can now give, of the manner in which so many have been deceived into a belief of the change. Suffice it to say, that when the wheat has a favorable start, it generally kills out the chess that may spring from a mixture of its seed and the wheat sown; but on the "low spots of ground" of which you speak, the reverse is the case—the wheat, as you remark, has there "suffered most by wet and frost," and leaves an open way for the germination and growth of the chess seeds. Then the wiry stalk on which the chess head is borne, winds itself into the head of wheat, and as the latter grows up, is disconnected from its parent plant, and we have a perfect case of "transmutation," a chess head on a wheat stalk! but only requiring about one min-

ute and two fingers to unravel it completely. Will our correspondent investigate the matter carefully for himself, and send us his conclusions?

ASHES AND PLASTER.—I have some plaster and wood ashes, and two lots of land, one wet and the other dry—will you inform me through the Cultivator which to apply to the dry land and which to the wet. G. A. BENTON. [Plaster is rarely of any use on wet land, and we should only apply it to the dry. Its benefit can only be determined by trial—sometimes it produces no sensible effect Nearly the same rule will apply to ashes, although in some instances it has produced a good effect on moist land—there is more chance for its succeeding on the moist land than the plaster. But as a general rule, manure of no kind can be relied on when applied to wet soils, and draining must be looked to as the first thing.

PATENT OFFICE SEEDS.—In your paper of May 28, I see that J. H. complains of neglect in not getting attention to his applications for seeds, &c., at the Patent Office. Perhaps J. H. is not aware that the business there is done on a wholesale scale. The retail part is the business of Members of Congress and officers of State, County, and Town Agricultural Societies. Such I have been credibly informed is the Commissioner's plan, and I can assure J. H. that in our region we find it works well. Now if J. H. is so situated as not to have the benefits of a Town Agricultural Society, I would recommend him to exert himself the coming season and start one. Then, through the officers of such society apply in due form for seeds, &c., and there will be no reason afterwards of neglect. W. M. B.

INQUIRY.—An intelligent young farmer wishes to know the results of *experience* in the use of the *water-ram*, and is desirous that such of our correspondents as have *tried it* for several months, a year, or more, should state if any serious difficulties have occurred, and what they are. What is the smallest amount of water, in quarts or gallons, per minute, that has been successfully employed in continued practice, for driving a ram? Will some correspondent give his experience?

MILL AND PRESS FOR SUGAR CANE.—A correspondent at Binghampton has kindly forwarded a series of drawings of a mill, press, and evaporating pan, for the manufacture of molasses or sugar from the Chinese sugar cane; but as we do not learn that they have been fully tried, we propose to suspend their insertion until experience has proved their value. In the mean time, we shall be glad to learn the results of experiments made with them.

☞ "The Fourth Annual Report of the Secretary of the Massachusetts Board of Agriculture, together with the reports of committees appointed to visit county societies, with an appendix containing an abstract of the Finances of the County Societies," has been sent us by C. L. FLINT, Esq., the courteous editor. We have already noticed his report (on grasses,) which forms the portion of the present volume of most general and lasting interest.

☞ We notice the names of ALBERT ALLEN, Esq., Rev. R. J. BRECKINRIDGE, D. D,. and R. J. SPURR, all of Fayette Co., A. PETER of Jefferson Co., and D. D. OWEN of New-Harmony, Ind., as successful competitors for the prizes on Essays offered by the Kentucky State Ag. Society.

☞ At a sale of Short-Horns, near Dumfries, May 8, the entire sum realised was £2001 for 77 animals. The lowest sum brought was £19, 15s, and two splendid bullocks brought £33 each, the largest sums obtained. The average was £25, 19s. 8½d.

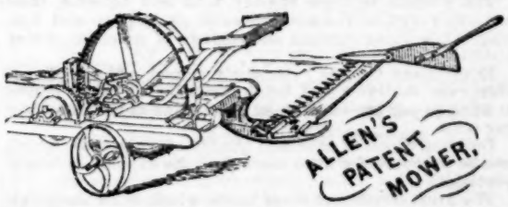
☞ The Dearborn Co, (Ind.) Ag. Society will hold their Fair this year at Aurora, Sept. 29, and the three following days.

Dunham & Wood,

ETNA, TOMPKINS CO., N. Y., BREEDERS OF

PURE SHORT-HORNS, having choice Herd-Book pedigrees.
PURE LEICESTER SWINE, finely framed, and quickly-fattened, large hogs.
PURE BERKSHIRE SWINE, fine boned, early maturing, medium-sized hogs.
PURE DOMESTIC FOWLS, of choice varieties.
PURE WILD TURKEYS, domesticated; valuable farm and splendid park ornaments.

Choice single animals, or paired suitable to breed together, supplied upon short notice at reasonable rates.
July 1—m1t*



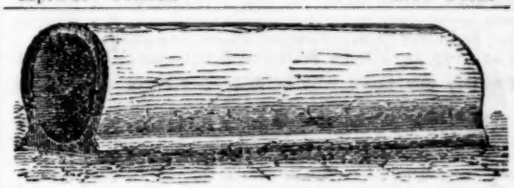
The Best Mowing Machine in the World.

ALLEN'S
PATENT IMPROVED,
MOWING MACHINE.
AND COMBINED MOWER AND REAPER;

STRONG, simple in construction, not liable to get out of order, compact, light, easy of draft, perfectly safe to the driver, and may be worked at a slow gait by Horses or Oxen. No clogging of knives; works well on rough ground, also on side-hills, salt and fresh meadows, and in any kind of lodged grass and clover.

Warranted to Give Entire Satisfaction.

Manufactured at the Agricultural Implement Manufactory, and for sale at the Warehouse and Seedstore of
R. L. ALLEN, 189 & 191 Water Street,
April 30—w9tm2t. New-York.



Appleton's Drain Tile Works,

Corner of Lydius and Snipe streets, Albany, near Mr. Wilson's Nursery.

HORSE SHOE TILE 14 INCHES LONG.

PRICES—4½ inches calibre, $18 per 1000 pieces—3½ inch. $15 per 1000—2½ inches, $12 per 1000.

SOLE TILE 14 INCHES LONG.

4 inches calibre. $40 per 1000—3 inches, $18 per 1000—2 inches, $12 per 1000.

THE subscriber having enlarged his works, is now prepared to furnish Drain Tile of the various patterns and prices. Also large Tile for small streams and drains about dwellings, &c., at $4, $6, and $8 per 100 pieces. He warrants his Tile to be perfectly sound, and to fit good at the joints, so as to admit water and keep out the dirt. The Tile have a larger calibre than any other of American manufacture for the same prices; they are also more than 14 inches in length—1000 pieces will lay 72 rods.

Tile delivered at the docks and railroads free of cartage. Specimens can be seen at L. & M. Merchants', 71 Quay-st., Albany, near the Steamboat Landing.

Full directions for laying Tile will be sent free to those addressing the subscriber.

He would only add that Tile from his establishment obtained the first prizes at the Albany county and N. Y. State Fairs. Practical drainers furnished if required.

Orders from all parts will be thankfully received and promptly attended to. Address JOHN APPLETON,
195 Washington-st., Albany, N. Y.
March 26—weow8tm3m.

Choice Farm Lands for Sale.

THE ILLINOIS CENTRAL R. R. COMPANY,

IS NOW PREPARED TO SELL ABOUT

1,500,000 ACRES

OF CHOICE FARMING LANDS,

In Tracts of 40 Acres and upwards, on Long Credits and at Low Rates of Interest.

THESE Lands were granted by the Government to aid in the construction of this Road, and are among the richest and most fertile in the world. They extend from north-east and north-west, through the middle of the State, to the extreme south, and include every variety of climate and productions found between those parallels of latitude. The northern portion is chiefly prairie, interspersed with fine groves, and in the middle and southern sections timber predominates, alternating with beautiful prairies and openings.

The climate is more healthy, mild and equable, than any other part of the country—the air is pure and bracing, while living streams and springs of excellent water abound.

Bituminous Coal is extensively mined, and supplies a cheap and desirable fuel, being furnished at many points at $2 to $4 per ton—and wood can be had at the same rate per cord.

Building Stone of excellent quality also abounds, which can be procured for little more than the expense of transportation.

The great fertility of these lands, which are a black rich mould from two to five feet deep, and gently rolling,—their contiguity to this Road, by which every facility is furnished for travel and transportation, to the principal markets North, South, East, West, and the economy with which they can be cultivated, render them the most valuable investment that can be found; and present the most favorable opportunity for persons of industrious habits and small means to acquire a comfortable independence in a few years.

Chicago is now the greatest grain market in the world—and the facility and economy with which the products of these lands can be transported to that market, make them much more profitable at the prices asked, than those more remote at government rates,—as the additional cost of transportation is a perpetual tax on the latter, which must be borne by the producer, in the reduced price he receives for his grain, &c.

The Title is perfect—and when the final payments are made, Deeds are executed by the Trustees appointed by the State, and in whom the title is vested, to the purchasers, which convey to them absolute titles in Fee Simple, free and clear of every incumbrance, lien or mortgage.

The Prices are from $6 to $50—Interest only 3 pr. ct.

Twenty per cent. will be deducted from the Credit Price for Cash.

Those who purchase on long credit, give notes payable in 2, 3, 4, 5 and 6 years after date, and are required to improve one-tenth annually for five years, so as to have one-half the land under cultivation, at the end of that time.

Competent Surveyors will accompany those who wish to examine these Lands, free of charge, and aid them in making selections.

The lands remaining unsold are as rich and valuable as those which have been disposed of.

SECTIONAL MAPS

Will be sent to any one who will enclose fifty cents in Postage Stamps, and Books or Pamphlets, containing numerous instances of successful farming, signed by respectable and well-known farmers living in the neighborhood of the Railroad Lands, throughout the State—also the cost of fencing, price of cattle, expense of harvesting, threshing, etc.,—or any other information—will be cheerfully given on application, either personally or by letter, in English, French or German, addressed to

JOHN WILSON,
Land Commissioner of the Ill. Central R. R. Co.
Office in Illinois Central Railroad Depot, Chicago Ill.
April 9—w&m6m

"KNOW THYSELF:" A MIRROR OF THE MIND, or, Your CHARACTER from your LIKENESS. For particulars, send a three-cent stamp to

FOWLER & WELLS.
June 11—w4tm2t 308 Broadway, New-York.

Berkshire Pigs for Sale!

WARRANTED of pure breed, and at a low figure.

WILLIAM J. PETTEE.
June 11—w&mtf Lakeville, Conn.

IMPROVED SELF-ADJUSTING HAY ELEVATOR,

OR

HOISTING FORK,

With Anti-Friction Blocks, Ropes, &c.,

MANUFACTURED AND FOR SALE BY

D. LANDRETH & SON,

Nos. 21 and 23 South Sixth-Street, Philadelphia.

THIS is one of the most important implements in haying; with it a large load may be removed from the wagon and deposited in any part of the mow in a few minutes, without labor and fatigue to workmen, thus greatly facilitating one of the most laborious duties of the farm, besides expediting business—an important matter in saving hay.

Farmers should be cautious not to use the common blocks. The friction is so great as to cause them in many instances to take fire. With the anti-friction blocks no such danger need be apprehended.

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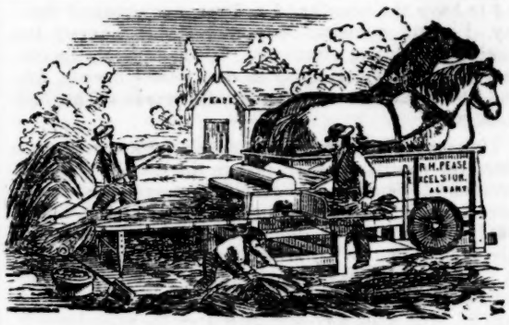
June 11—w4tm1t.

Please to Read This.

IF YOU WANT EMPLOYMENT, send at once for Mr. SEARS' CIRCULARS TO BOOK AGENTS. Our publications are considered among the most saleable. Address (post-paid) ROBERT SEARS, Publisher,
March 19—w6tm6t No. 181 William-st., New-York.



Excelsior Ag. Works, Albany, N. Y.

RICH'D H. PEASE, Proprietor.

WE OFFER the farmers and other responsible persons of this country, a rare chance to make money as fast as they can in most any other way, by selling our Celebrated Excelsior Patent Railway Endless Horse Powers, Threshers, Cider Mills, Saw Mills, &c., &c., for which we will allow them a liberal commission. Last season many farmers sold these machines for us, and they all made money, and are anxious to sell them again this season. All communications addressed to the subscriber will be promptly answered. RICH'D H. PEASE.

CERTIFICATES.

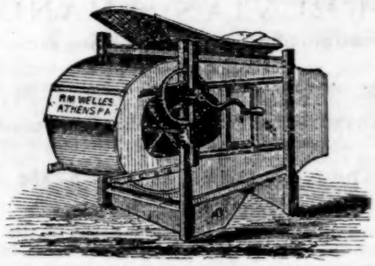
BEDFORD Co. Tenn. Oct. 15, 1856.

We the undersigned hereby certify that we have purchased of the Agent of the Manufacturer, Richard H. Pease of Albany, New-York, his "Excelsior Horse Power and Thresher," and having used them a sufficient length of time to convince us of their utility and durability, feel no hesitancy in saying that in our opinion they are the very best of which we have any knowledge, they having performed to our entire satisfaction. Given under our hand, day and date above.

GARRET PHILLIPS, M. L. DISMUKES, THOS. LIPSCOMB, WM. A. ALLEN, J. T. ARNOLD, W. W. HASTINGS, JAMES MULLINS, BENJ. GARRETT, ALEX. SANDERS, WM. M. GOGGIN, ALEX. EAKIN, REDDING GEORGE, J. J. KOONCE, W. C. J. BROWN,
H. D. DAVIDSON.

EAST GREENWICH, N. Y., Feb. 25, 1857.

MR. R. H. PEASE—I received the Two Horse Power, Thresher and Separator I purchased of you, and put it to work to test it. I have threshed 2,500 bushels of wheat, oats and rye with them, without a break of any kind. It works to my entire satisfaction, and I think there is no better machine made. WM. MCNEIL.
May 14—w&mtf.



The Elcelsior Fanning Mill.

THIS is the neatest, cheapest and best Fanning Mill known, and is warranted to be second to no other made in the United States, for durability, simplicity, rapidity in doing work, or for any of the purposes for which a first class fanning mill is designed.

Only one size. Price $25. Pulley for power $1.00 extra.

A very liberal discount made to dealers, who are invited to order a sample mill. To introduce our mills into new localities, we will make a liberal allowance on the freight in all sample mills, and on those ordered by retail customers. Manufactured only by us at the Tioga-Point Agricultural works. Descriptive Circulars and Priced lists of all our machines will be sent on application by mail. Address

R. M. WELLES & BROOKS,

May 28—weow2t—m2t. Athens, Bradford Co., Pa

New-York State Tile Works,

On the Western Plank Road, near the Orphan Asylum, Albany, N. Y.

THE subscriber having purchased the Drain Tile works of Artcher & Co., offers for sale the following sized Tile:

HORSE SHOE TILE CUT 14 INCHES LONG—PIECES.

2½ inches calibre,	$12	per 1000
3½ " "	15	"
4½ " "	18	"
5½ " "	40	"
6½ " "	60	"
8 " "	80	"

SOLE TILE CUT 14 INCHES LONG—PIECES.

2 inches calibre,	$12	per 1000
3 " "	18	"
4 " "	40	"
5 " "	60	"
6 " "	80	"

I warrant every Tile perfectly sound, and harder and better Tile than any before made in Albany. If not, the purchaser need not pay for them. I will also undertake draining to any amount, and at any place, and furnish Tile for the same, and ask no pay until the employer is perfectly satisfied with the result. I am also willing to render my services in laying out drains free of charge, to any one who purchases Tile of me.

A liberal per centage will be allowed on orders for 10,000 or more. Cartage free. Gentlemen, your patronage is respectfully solicited. Orders from all parts thankfully received and promptly attended to.

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(Late Artcher & Co.) Office 63 Quay Street.
EMERY BROTHERS, Agents, Corner State and Green Sts.
April 30—w4t&eow3ms—m6t.

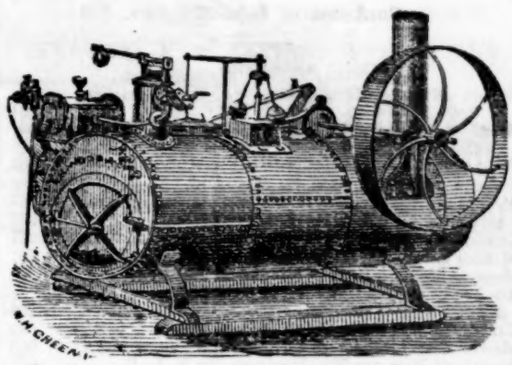
PERUVIAN GUANO,

In large or small quantities at Lowest Market Price

R. L. ALLEN, 189 & 191 Water-st., New-York.

☞ BEWARE of adulterated or damp Guano, and of all other FERTILIZERS which can be mixed or depreciated without detection. The demand for artificial and commercial fertilizers is now so large in the United States, that it is becoming a great object to adulterate them. This has been done to so considerable an extent in England, as to have called for the most stringent measures for the exposure of rascality, and the protection of farmers.

Feb. 26—weow&mtf



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Eaton, Madison Co., N. Y.

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PORTABLE STEAM ENGINES

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WE HAVE made great improvements in our Engines the past winter, particularly in the manner of setting the tubes in the boilers, (by Prosser's Patent) adding a large wrought-iron dome in place of small cast ones, increased the size of fire-box, with ash-pan that can be closed up tight or opened at pleasure,—also in the manner of connecting the governor to throttle, making it direct action.

Parties wishing Circulars with cuts of Engine, should enclose P. O. Stamp to pay return postage on same. The following is our

PRICE LIST FOR 1857.

Horse power	estimate weight	space occupied	cash price	fly-wheel diameter	face of wheel
2½	2000 lb.	4 by 5 ft.	$240	39 in.	5½ in.
3	2200 "	5 by 5 "	290	39 "	5½ "
4	2500 "	7 by 5 "	355	40 "	6 "
6	3600 "	7 by 5 "	550	44 "	7 "
8	4800 "	9 by 6½ "	700	48 "	8 "
10	6000 "	10 by 6½ "	875	60 "	8 "
12	7500 "	14 by 6½ "	1050	72 "	12 "

The above price includes boxing and delivered on board cars.

A. N. WOOD & CO.

April 23—wtf—June 1—mft.

ALBANY TILE WORKS

Corner of Patroon and Knox Streets, Albany, N. Y.

THE subscribers, being the most extensive manufacturers of Draining Tile in the United States, have on hand, in large or small quantities for Land Draining, the following descriptions, warranted superior to any made in this country, hard burned. On orders for 10,000 or more, a small discount will be made.

HORSE-SHOE TILE CUT 14 INCHES LONG—PIECES.

2½ inches rise,	$12	per 1000
3½ " "	15	"
4½ " "	18	"
5½ " "	40	"
6½ " "	60	"
8 " "	80	"

SOLE TILE CUT 14 INCHES LONG—PIECES.

2 inches rise,	$12	per 1000
3 " "	18	"
4 " "	40	"
5 " "	60	"
6 " "	80	"

Also on hand 6-inch calibre Octagon pipe, $20 per 100, and 8-inch calibre Round pipe, $30 per 100, for large drains —Cornice Brick, of the pattern used in the City of Washington, also on hand.

Orders respectfully solicited. Cartage free.

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(Late BABCOCK & VAN VECHTEN,)
Albany, N. Y.

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Excelsior Ag. Works, Warehouse and Seed Store,
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Contents of this Number.

THE FARM.

Stable Manure—Dr. Voeckler's Investigations, by Prof. JOHNSON, - - - - - - - - - 201
Facts in the Agriculture of New-Jersey—Prof. Cook's Report, - - - - - - - - - - 203
Drill Seeding—Increased Yield, by E. DENNISON, - 204
Potatoes on Clover Sod, by B., - - - - - - 205
Hen Manure or Guano on Corn, by J. C. TAYLOR, - 205
Culture of Beans, by J. U. A., - - - - - - 207
Drilling vs. Broadcast Seeding, by SARATOGA FARMER, 207
Mixing Lime with Manure, by DANIEL MILLER, - 207
How to Manage Fifty Acres, by A FARMER, - - 208
To Apply Hen Manure to Hills of Corn, by D. FARLOW, - - - - - - - - - - - 208
Underdraining with Stone, - - - - - - - 209
Manures—Night Soil and the Droppings of Hens, - 209
Maryland Plan for Tile Draining, by E. L. R., - 212
On the Use of Ashes, by JOSEPH ARNOLD, - - 213
Measuring Hay—Slow to Move, - - - - - 214
Management of Home-Made Poudrette, - - - 215
Warming and Ventilating, by G. H. AKINS, - 215
Evan's Rotary Terracultor, - - - - - - 216
The Bean as a Fallow Crop, - - - - - - 216
Remedy for a Wet Soil, - - - - - - - 216
Saw-Dust for Litter and as Manure, by H. V. WELTON, 220
Bones as a Manure, - - - - - - - - - 221
"Chess in Wheat," - - - - - - - - - 228
Inquiries and Answers, - - - - - - - - 222
Notes for the Month, - - - - - - - - - 226

DOMESTIC ECONOMY.

Salt Barrels for Preserving Apples, - - - - 204
Six Valuable Recipes, by J. F. D. L., - - - - 214
Hard Soap, by AGRICOLA, - - - - - - - 214
How to Harden Tallow, by C. S. HARD, - - - 214
Carrot Pie, by E. E., - - - - - - - - 214
Dairy Management and Butter Making, - - - 218
More about Candle Making, by W. B. HANFORD, - 224
The Woodburn Sale, by S. W. JOHNSON, - - - 225

THE GRAZIER.

Wintering Cattle and Horses, by A. H. BRONSON, - 205
Remedy Wanted, by E. M. H., - - - - -2 05
Drying-Off Cows, by A DAIRYMAN, - - - - - 207
Disease and Death among Calves, - - - - 207
Cure for Caked Udder in Cows, by W. T. L., - 207
Large Lamb, by A. WHEDON, - - - - - 208
Salt, Sulphur and Bones for Cattle, - - - - 210
Remedy for Bad Milk in Cows, - - - - - 210
Value of Cob Meal, by C. T. ALVORD, - - - 213
Mr. Chapman's Short-Horn Bull Duke of Oxford, 217
Another Cure for Warts, by T. K. REDDISH, - 218
Wolf Teeth Once More, by CHARLESTONIAN, - - 220
Value of Different Kinds of Food for Stock, by C. T. ALVORD, - - - - - - - - - - 221
Extensive Shipment of Valuable Animals, - - 223

THE HORTICULTURIST.

Mutilated Evergreens, - - - - - - - - 206
Experimenters on the Curculio, - - - - - 206
Thumb Pruning, - - - - - - - - - 206
Cranberry Culture, by D. L. HALSEY, - - - - 206
Garden Vegetables, - - - - - - - - 208
Planting and Hoeing, - - - - - - - - 211
Fire Blight, by DAVID THOMAS, - - - - - 211
Early-Bearing Varieties of the Apple, by SUEL FOSTER, - - - - - - - - - - - 215
The Apple Borer, by J. E. SPILMAN, - - - - 218
A Garden for a Farmer, by J. S. SHIPMAN, - - 218
Culture of the Pea-Nut, by F. L. M., - - - 218

THE POULTRY-YARD.

Chicken Roosts, by E. L. R., - - - - - - 208

ILLUSTRATIONS.

Training Mutilated Evergreens, - - 206
Top and Bottom Tiles for Draining, - - 212
Drain as Laid with Tiles and Brick, - 213
To Save Poudrette, - - - - - - 215
Evan's Rotary Terracultor, - - - - 216
Short-Horn Bull "Duke of Oxford," - - 217

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THE subscribers have for sale pure Suffolk Swine, bred from their best imported Suffolk stock.
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Or ISAAC STICKNEY, Boston, Mass.
April 23—weow4t—and 1am4t.

PERUVIAN GUANO,

Superphosphate of Lime, &c.

THE best quality of Peruvian Guano, with Government weight and brand on each bag, by the cargo or in smaller quantities, at the LOWEST PRICE.

SUPERPHOSPHATE OF LIME...Being agent of the largest manufacturers, I can supply a first-rate article at the lowest manufacturer's prices.

BONE-DUST—Coarse and fine ground—also sawings and filings.

POUDRETTE and TAFEU by the barrel.

My warehouse is the LARGEST depot in the United States for the various kinds of FERTILIZERS, all of which are guaranteed of the best and most reliable quality.

AGRICULTURAL AND HORTICULTURAL IMPLEMENTS, FIELD AND GARDEN SEEDS,

A large and complete assortment of all the improved kinds.

MOWING AND REAPING Machines.

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